II. Violations of the *Wh* island constraint and the subjacency condition

O. Ross (1967) noticed that a clause introduced by a *wh* pronoun is an island. This fact, generally accounted for by means of a primitive constraint (the *Wh* Island Constraint), can be explained by more general principles in the framework recently developed by Chomsky.1 In this framework, extraction from a clause is blocked by the following general conditions on rule application:

(a) Tensed S Condition (TSC): no rule can involve two elements X and Y in (1) if α is a tensed sentence.

(b) Specified Subject Condition (SSC): no rule can involve two elements X and Y in (1) if α has a subject distinct from Y and not controlled by X.

(c) Subjacency Condition: no rule can involve X and Y in (2) if both α and β are “bounding nodes” (which, for the time being, we may assume to be NP and S').

(1) \[ \ldots X \ldots [\alpha \ldots Y \ldots] \ldots X \ldots \]
(2) \[ \ldots X \ldots [\alpha' \ldots [\beta \ldots Y \ldots] \ldots] \ldots X \ldots \]

Both TSC and SSC are superficially falsified by acceptable English sentences like the following (3), in which a *wh* pronoun originating in a non-subject position of an embedded tensed sentence has been moved to the main complementizer:

(3) Who do you think Bill saw _____?

This fact is accounted for, in the references quoted in footnote 1, by specifying in the grammar of English a restricted class of language-specific exceptions to SSC and TSC. That is to say, the following proviso on SSC and TSC is specified in the grammar of English:

(4) \[ \ldots \text{unless } X \text{ is in COMP and } Y \text{ is in COMP.} \]

Informally speaking, (4) means that, in English, the extraction of an element from a clause can violate TSC and/or SSC just in case the element is moved from a COMP position to a higher COMP position.

In this framework, the *Wh* Island Constraint follows from the general

*This chapter appears as an independent essay in *Journal of Italian Linguistics*, 5, 1980.*
principles just mentioned plus a plausible assumption on the syntax of the complementizer. Consider the abstract structure of a wh island: an element X cannot be extracted out of (5) because:

(1) it cannot be moved directly to a position outside S' because of TSC and SSC;

(2) it cannot be moved to the COMP position (the "escape hatch") because this position is already filled (under the assumption that a COMP cannot be filled more than once).²

![Diagram](image)

This analysis has been repeatedly proposed in the current literature, and I do not want to discuss it again in detail. The only point I would like to stress here is that this "explanation" doesn't predict that the Wh Island Constraint is universal. In fact, it makes crucial reference to the "escape hatch" (4), which is supposed to be specific to English, at least in the framework I am adopting here (cf. Chomsky 1977a, p. 85). Given the assumption that TSC and SSC admit language specific exceptions ("escape hatches"), as far as I can see nothing in this framework can exclude the existence of a grammar whose specific "escape hatch" allows extraction from a wh clause.

But this apparent weakness of the theory turns out to be empirically justified: it is a fact that in several natural languages the Wh Island Constraint can be freely violated.

1. One of these languages is Italian. In Italian a relative pronoun can be extracted from an embedded indirect question:⁴

(6) (a) Il solo incarico che non sapevi a chi avrebbero affidato è poi finito proprio a te.
   "The only charge that you didn't know to whom they would entrust has been entrusted exactly to you."
(b) Tuo fratello, a cui mi domando che storie abbiano raccontato, era molto preoccupato.
   "Your brother, to whom I wonder which stories they told, was very troubled."
(c) La nuova idea di Giorgio, di cui immagino che cosa pensi, diverrà presto di pubblico dominio.
   "Giorgio's new idea, of which I imagine what you think, will soon become known to everybody."

Violations of Wh

With interrogatives:

(7) (a) *C' è
   "Y"?
(b) ??!
   "Y"?
(c) ??!
   "Y"

This behaviour is fact that, in It, are often unacceptable and can give variable acceptability:

(8) (a) *V
   "I"
(b) ??!
   "I"
(c) ??!
   "I"

There are several facts that, in fact, give plausibly, give plausibility to the violation of the wh clause on the wh element. In English: for instance, the fact that a wh element in the clause can be used in the coordinating principle-

(9) (a) *Qui gli affidi a tutti
   "Th
tutti
Violations of the Wh island constraint and subjacency condition

With interrogative pronouns the violation of the Wh Island Constraint gives variable results, which range from unacceptable to unnatural:

(7)  
(a) *Chi ti domandi chi ha incontrato?  
   "Who do you wonder who met?"
(b) ?? Chi non sai che cosa ha fatto?  
   "Who don't you know what did?"
(c) ?? A chi non sai che cosa ho detto?  
   "To whom don't you know what I said?"

This behaviour is probably to be related (Guglielmo Cinque, p.c.) to the fact that, in Italian, non-echo questions with more than one wh element are often unacceptable, and at best highly marginal: the following sentences are consistently judged approximately at the same degree of unacceptability as the corresponding sentences of (7):

(8)  
(a) *Mi domando chi ha incontrato chi.  
   "I wonder who met who."
(b) ?? Non so ancora chi ha fatto che cosa.  
   "I do not yet know who did what."
(c) ?? Non so che cosa hai detto a chi.  
   "I do not know what you said to whom."

There are several possible ways of accounting for the unacceptability of (8): for instance, one could propose that these sentences are excluded by a constraint on the base component of the grammar of Italian, such that only one wh element can be generated per clause; alternatively (perhaps more plausibly, given the relative acceptability of some of these examples), this fact could be treated through an appropriate formulation of the interpretive rules for wh words in interrogatives. Anyhow, it is at least very plausible that whatever solution is to be adopted in order to account for (8), it will account automatically for the parallel status of (7). I will therefore assume that the difference in status between (6) and (7) is due to an independent property of the interrogative construction in Italian, which is irrelevant for the questions at issue in this paper, and in what follows I will only discuss cases of extraction of relative pronouns from indirect questions:

Notice that the process of relative clause formation in Italian crucially involves the movement of the relativized element: no resumptive pronoun is used in the construction, and the Complex NP Constraint is respected:

(9)  
(a) *Questo incarico, che non sapevo la novità che avrebbero affidato a te, ...  
   "This task, that I didn't know the news that they would entrust to you, ..."
(b) *Tuo fratello, a cui temo la possibilità che abbiano raccontato tutto, ...
"Your brother, to whom I am afraid of the possibility that they told everything, ..."

(c) *La nuova idea di Giorgio, di cui immagino facilmente l' eventualità che Piero pensi male, ..."

"Giorgio's new idea, of which I easily imagine the event that Piero has a bad opinion, ..."

The unacceptability of (9) is quite relevant: if sentences (9) were acceptable, the acceptability of (6) would turn out to be of no particular interest. The construction would simply be unconstrained, probably to be treated along the lines suggested for the construction mentioned in footnote 6. But since sentences (9) are unacceptable, an explanation is required for the asymmetry between the Wh Island Constraint and the Complex NP Constraint shown in (6) – (9).

2. If we extend to Italian the system proposed in the references of footnote 1, the derivation of sentences (6) is possible only at the cost of violating some conditions on rules, or significantly changing the syntax of the complementizer. Consider, for instance, the plausible base structure of (6)c:

Sentence (6)c can be derived:

(A) By violating the strict cyclicity condition: *di cui* is moved into COMP$_1$ at the cycle $S'_1$, then to COMP$_2$ at the cycle $S'_2$, and then *che cosa* is moved into COMP$_1$. 

(B) By violating both TSC and SSC: *che cosa* is moved into COMP$_1$ at the first cycle, and *di cui* is moved into COMP$_2$ directly from its base position at the second cycle.

(C) By allowing a COMP to be filled more than once per cycle: *che cosa* and *di cui* are both moved into COMP$_1$ at the first cycle, and then *di cui* is moved to COMP$_2$ at the second cycle.

Solution (A) seems to me highly suspect: allowing a grammar to violate the strict cyclicity condition amounts to emptying the construct "transformational cycle" of any empirical content. Therefore, as long as this construct is believed to play any role in linguistic theory, solution (A) doesn't seem to be a viable one.

Solution (B) could appear, at first glance, to have more disruptive con-
he possibility that they imagine facilmente l' imagine the event that sentences (9) were accept-

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base structure of (6)c:

he cosa—di cui

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s moved into COMP1 at s moved into COMP1 at rectly from its base posi-

on once per cycle: che cosa' cycle, and than di cui is

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fore, as long as this con-

ory, solution (A) doesn't

ave more disruptive con-

sequences than solution (C) for the theory I am adopting here. But upon careful consideration this impression turns out to be incorrect. Recall that, under the assumption of footnote 2, the explanation of the Wh Island Constraint in English crucially depends on the language-specific definition of the possible exceptions to SSC and TSC. Therefore, nothing prevents the construction of a grammar whose specific “escape hatch” permits extraction from a wh clause.11 For instance, the following rough formulation would give the desired result for Italian:

(11) Movement into COMP is not constrained by SSC and TSC.12

As far as I can see, there is no theoretical reason why (B) would be more costly than (C) (but see paragraph 6): both solutions require some specific hypotheses on the grammar of Italian, and in no sense is the second a priori simpler than the first.

3. In this paragraph I will argue on empirical grounds for solution (B). With respect to structures like (10), solutions (A), (B), (C) seem to be extensionally equivalent; but if we consider more complicated structures, their predictions interestingly diverge. The following phrase marker roughly represents the relevant case:

NP

S3

COMP3

- WH

S2

COMP2

+ WH

S1

REL PRO

+ WH

(12)

In this structure, a relative clause (S3) contains an indirect question (S2), which in turn contains an indirect question (S1). The relative pronoun is base generated in the most deeply embedded indirect question. It is easy to verify that, according to solutions (A) and (C), an acceptable sentence should be derivable from a base structure like (12). According to solution (A), the relative pronoun can climb up cycle after cycle, and then the interrogative complementizers can be filled by the respective interrogative pronouns. According to solution (C), the relative pronoun can climb up with the respective interrogative pronouns on cycles S1 and S2, and then it can move alone to the relative complementizer at the S3 cycle.
On the contrary, solution (B) predicts that no grammatical surface structure can be derived from (12). Putting aside the derivations which are ruled out via strict cyclicity, only one possibility is left that COMP\(_1\) and COMP\(_2\) are filled at the respective cycles by the respective interrogative pronouns, and then, at the S\(_3\) cycle, the relative pronoun is moved directly from its base position to the relative COMP; but such a movement is blocked by the subjacency condition, since the source position and the target position are separated by two bounding boundaries.

The systematic unacceptability of the second sentences of the following pairs shows that the prediction of solution (B) is correct, and therefore this approach is to be preferred over solutions (A) and (C) on empirical grounds:

\[
\begin{align*}
(13) & \quad \text{(a) Non so proprio chi possa avere indovinato a chi affiderò questo incarico.} \\
& \quad \text{"I really don’t know who might have guessed to whom I will entrust this task."} \\
& \quad \text{(b) *Questo incarico, che non so proprio chi possa avere indovinato a chi affiderò, mi sta creando un sacco di grattacapi.} \\
& \quad \text{"This task, that I really don’t know who might have guessed to whom I will entrust, is getting me into trouble."}
\end{align*}
\]

\[
\begin{align*}
(14) & \quad \text{(a) Non immagino quanta gente sappia dove hanno mandato Francesca.} \\
& \quad \text{"I do not imagine how many people know where they have sent Francesca."} \\
& \quad \text{(b) *Francesca, che non immagino quanta gente sappia dove hanno mandata, il giorno della partenza era disperata.} \\
& \quad \text{"Francesca, that I don’t imagine how many people know where they have sent, was in despair."}
\end{align*}
\]

\[
\begin{align*}
(15) & \quad \text{(a) Mi sto domandando a chi potrei chiedere quando dovrò parlare di questo argomento.} \\
& \quad \text{"I am wondering whom I could ask when I will have to talk about this topic."} \\
& \quad \text{(b) *Questo argomento, di cui mi sto domandando a chi potrei chiedere quando dovrò parlare, mi sembra sempre più complicato.} \\
& \quad \text{"This topic, of which I am wondering whom I could ask when I will have to talk, seems to me more and more complicated."}
\end{align*}
\]

Notice that the unacceptability of the preceding examples cannot simply be attributed to the obvious increase of complexity with respect to (6). In fact, the substandard relatives without movement corresponding to (13)b–(15)b seem to me perfectly acceptable (at their peculiar stylistic level), while certainly somewhat hard to process:

\[
\begin{align*}
(16) & \quad \text{(a) %Questo incarico, che non so proprio chi possa avere in-}
\end{align*}
\]
Violations of the Wh island constraint and subjacency condition

There is an even more interesting class of structures on which solutions (A), (B), (C) make empirically distinguishable predictions; this class of structures can be roughly represented in the following way:

In (17)a, \( S'_1 \) is a relative clause, \( S'_2 \) is a declarative clause, \( S'_3 \) is an interrogative clause; in (17)b, \( S'_2 \) is a relative clause, \( S'_3 \) is an interrogative clause, \( S'_1 \) is a declarative clause. Structures (17)a and (17)b minimally differ in the
respective embeddings of the declarative clause and the interrogative clause.

It is easy to ascertain that, as before, solution (A) and solution (C) predict that an acceptable sentence can be derived in both cases. On the contrary, solution (B) predicts that an acceptable sentence can be derived from (17)a, but not from (17)b. The possible derivation from (17)a goes as follows: at the first cycle an interrogative pronoun is moved into COMP₁, the relative pronoun is moved directly into COMP₂ at the second cycle, and then into the relative COMP at the third cycle. But no well-formed surface structure can be derived from (17)b; once again, excluding all the derivations blocked by the Strict Cyclicity Condition, one possibility is left: the relative pronoun is moved into COMP₁ at the first cycle, an interrogative pronoun is moved into COMP₂ at the second cycle, and at the third cycle the relative pronoun should be moved from COMP₁ to COMP₃; but, as before, this movement is blocked by subjacency.

The prediction of solution (B) is correct: in the following pairs of sentences, the first corresponding to structure (17)a, the second corresponding to structure (17)b, the second is systematically unacceptable:  

(18)  
(a) Il mio primo libro, che credo che tu sappia a chi ho dedicato, mi è sempre stato molto caro.  
“My first book, which I believe that you know to whom I dedicated, has always been very dear to me.”  
(b) *Il mio primo libro, che so a chi credo che abbia dedicato, mi è sempre stato molto caro.  
“My first book, which I know to whom you believe that I dedicated, has always been very dear to me.”

(19)  
(a) La macchina che credo che Gianni si domandi se potrà utilizzare nel week end è la mia.  
“The car that I believe that Mario wonders whether he will be allowed to use during the week end is mine.”  
(b) *La macchina che mi do man do se Mario creda che potra utilizzare nel week end è la mia.  
“The car that I wonder whether Mario believes that he will be allowed to use during the week end is mine.”

(20)  
(a) Gianni, a cui ritengo che tu sappia che cosa voglio regalare, deve comunque restare all’oscurro di tutto.  
“Gianni, to whom I believe that you know what I want to give, must be kept in the dark about everything.”  
(b) *Gianni, a cui so che cosa ritieni che voglio regalare, deve comunque restare all’oscurro di tutto.  
“Gianni, to whom I know what you believe that I want to give, must be kept in the dark about everything.”

(21)  
(a) Il tuo libro, che Gianni mi ha detto che non si ricorda più a chi ha imprestato, è ormai introvabile.
Violations of the Wh island constraint and subjacency condition

"Your book, that Gianni told me that he doesn't remember anymore to whom he lent, isn't to be found anymore."

(b) "Il tuo libro, che Gianni non si ricorda più a chi ha detto che ha lasciato sul tavolo, è ormai introvabile.

"Your book, that Gianni doesn't remember anymore to whom he said that he let on the table, isn't to be found anymore."

In conclusion, solution (B) is empirically superior to both solutions (A) and (C). The results arrived at in this paragraph can be summarized as follows:

1. Wh movement doesn't obey TSC and SSC; otherwise, the acceptable sentences (6), (18)a-(21)a would not be derivable;
2. Wh movement does obey the Subjacency Condition; otherwise, the unacceptable sentences (13)b-(15)b, (18)b, (21)b would be derivable;
3. The bounding node which is relevant for subjacency is S', not S; otherwise, there would be no way to distinguish between the acceptable sentences (6), (18)a-(21)a, and the unacceptable sentences (13)b-(15)b, (18)b-(21)b, since none of them could be derived.
4. All the examples considered so far in support of my hypothesis involve the movement of a relative pronoun from an object position (direct object, indirect object, prepositional object), but not from subject position. In fact, such examples as (13)b-(15)b, (18)b-(21)b become much more acceptable (while still remaining hard to process) when the relative pronoun is moved from subject position:

(22) (a) Questo incarico, che non so proprio chi possa avere indovinato a chi è stato affidato, mi sta creando un sacco di grattacapi. (cf. (13)b)

"This task, that I really don't know who might have guessed to whom has been entrusted, is getting me into trouble."

(b) "Il tuo libro, che Gianni non si ricorda più a chi ha detto che è rimasto a casa mia, è ormai introvabile. (cf. (21)b)

"Your book, that Gianni doesn't remember to whom he said that has been left in my house, isn't to be found anymore."

(c) Francesca, che non immagino quanta gente sappia dove è stata mandata, il giorno della partenza era disperata. (cf. (14)b)

"Francesca, that I do not imagine how many people know where has been sent, was in despair."

The marginal acceptability of these sentences is obviously a potential problem for the analysis presented in this paper. Nevertheless it can easily be shown that this fact is fully compatible with my proposal. Recall that:

1) the grammar of Italian permits a slightly substandard relative construction (mentioned in footnote 6) of the type unmarked COMP + re-
sumptive pronoun; the derivation of this construction doesn't require any kind of movement;

2) Italian is one of the languages in which subject pronouns can be optionally dropped.

From 1) and 2) it follows that, when the relativized element is a subject, the relative clause of the type unmarked COMP + resumptive pronoun is not distinguishable, at the surface level, from a relative clause derived via movement: in the second case (assuming the analysis proposed in the reference quoted in footnote 3), the pronominal subject is moved into COMP and then deleted; in the first case it is deleted in subject position via subject pronoun drop; the same string of phonetically realized elements is derived in both cases. Therefore, sentences (22) can be derived, in the framework proposed in this paper, as instances of the relative construction unmarked COMP + resumptive pronoun, with the subject resumptive pronoun deleted by subject pronoun drop (or left without phonetic realisation; see chapter IV for a detailed analysis of this phenomenon).

An obvious consequence of this proposal is the following: since relatives constructed by means of resumptive pronouns do not obey the Complex NP Constraint, if the analysis proposed for (22) is correct, it should turn out that the relativization of a subject can freely violate the Complex NP Constraint. This prediction holds true, at the specific stylistic level which allows relatives without movement:

(23)  
(a) "%Gianni, che non ho mai realmente creduto alla voce che fosse morto, è infatti vivo e hearty.

"Gianni, that I have never really believed the rumour that (he) was dead, is in fact hale and hearty."

(b) "%Tuo fratello, che temo seriamente la possibilità che anche stavolta arrivi nel bel mezzo della riunione, è un gran rompicatole.

"Your brother, that I am seriously afraid of the possibility that (he) comes in the very middle of the meeting, is a real nuisance."

In conclusion, the fact that sentences (22) are marginally acceptable is perfectly consistent with the analysis presented here. A more straightforward argument in favor of the proposed treatment of sentences (22) will be given in paragraph 7.

5. There is a further class of facts on which the hypothesis presented in this paper makes non trivial predictions: it predicts that any movement out of a wh clause should be blocked if the relative pronoun is extracted from a NP, under the assumption that, in Italian, NP is a bounding category (an assumption substantiated by the fact that the Complex NP Constraint holds for Italian): such a movement would violate the Subjacency
n doesn't require any subject pronouns can be d element is a subject, esumptive pronoun is ive clause derived via lysis proposed in the subject is moved into ed in subject position ally realized elements can be derived, in the relative construction subject resumptive pro-nt phonetic realisation; nenon).

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Violations of the Wh island constraint and subjacency condition

Condition, as can be seen in the following schema:

```
       NP
       |   
       v  v
NP   S'  
|   |
COMP S'  
|   |
COMP NP + WH  
|   |
REL PRO
```

The data which are relevant to check this prediction are the following:

16

(25) (a) Questo autore, di cui non ricordo chi mi abbia parlato per la prima volta, mi sembra estremamente interessante.
"This author, of whom I do not remember who talked to me for the first time, seems to me very interesting."

(b) Questo autore, di cui non ricordo chi mi abbia mostrato il primo libro, mi sembra estremamente interessante.
"This author, by whom I do not remember who showed me the first book, seems to me very interesting."

(c) Questo autore, di cui ricordo che mi hai mostrato il primo libro, mi sembra estremamente interessante.
"This author, by whom I remember that you showed me the first book, seems to me very interesting."

(26) (a) Francesca, di cui non so dove tu abbia sentito parlare prima d'ora, è una mia buona amica.
"Francesca, of whom I do not know where you have heard (someone) speaking before, is a good friend of mine."

(b) Francesca, di cui non so dove tu conosciuto la sorella, è una mia buona amica.
"Francesca, of whom I don't know where you have met the sister (= whose sister I don't know . . .), is a good friend of mine."

(c) Francesca, di cui so che recentemente hai conosciuto la sorella, è una mia buona amica.
"Francesca, of whom I know that you have recently met the sister (= whose sister . . .), is a good friend of mine."
(27)  (a) Gianni, di cui immagino che occasione ti abbiano parlato, ...  
     "Gianni, of whom I imagine in which occasion they talked to you, ..."
(b) Gianni, di cui immagino che occasione tu abbia visto la foto sul giornale, ...  
     "Gianni, of whom I imagine in which occasion you have seen the picture on the newspaper (= whose picture ...), ..."
(c) Gianni, di cui immagino che tu abbia visto la foto sul giornale qualche giorno fa, ...  
     "Gianni, of whom I imagine that you have seen the picture on the newspaper some days ago (= whose picture ...), ..."

In a, a prepositional complement of the verb is moved out of an embedded question; in b a prepositional complement of a noun is moved out of an embedded question; in c, a prepositional complement of a noun is moved out of an embedded declarative. Now, if the extraction analysis which is accepted in this paragraph is correct, my hypothesis predicts that the b sentences of the preceding triples should be unacceptable. As the following rough derivations show, sentences a can be derived, as proposed before, via direct movement of the wh phrase into the relative COMP (cf. (28)a); sentences c can be derived via successive cyclic movement of the relativized PP (cf. (28)c); but sentences b cannot be derived: putting aside the derivation which would violate strict cyclicity, the only possibility which is left violates subjacency, as indicated by the arrow in (28)b:

(28)  (a) Questo autore \[S' \text{ COMP } \ldots \[S' \text{ [COMP chi } \ldots \text{ [PP di cui]]}]]

(b) Questo autore \[S' \text{ COMP } \ldots \[S' \text{ [COMP chi } \ldots \text{ [NP } \ldots \text{ [PP di cui]]}]]

(c) Questo autore \[S' \text{ COMP } \ldots \[S' \text{ [COMP } \ldots \text{ [NP } \ldots \text{ [PP di cui]]}]]

Even if the relevant intuitions are not extremely sharp, this prediction seems to be reasonably correct: sentences b of (25), (26), (27) are significantly worse than sentences a-c.\textsuperscript{17}

The contrast becomes sharper in case of extraction from a subject NP: extraction from the subject of a declarative is possible, while extraction
from the subject of an embedded question gives an unacceptable result:

(29)  (a) Gianni, di cui so che una foto è apparsa recentemente sul "Gazzettino", ...
    "Gianni, of whom I know that a picture appeared recently on the 'Gazzettino', ...
    (b) *Gianni, di cui non so su che giornale una foto sia apparsa recentemente, ...
    "Gianni, of whom I do not know on which newspaper a picture appeared recently, ...

(30)  (a) Questo autore, di cui so che il primo libro è stato pubblicato recentemente, ...
    "This author, by whom I know that the first book has been published recently, ...
    (b) *Questo autore, di cui non so quando il primo libro sia stato pubblicato, ...
    "This author, by whom I do not know when the first book has been published, ...

(31)  (a) Piero, di cui ricordo che la sorella ha sposato un generale, ...
    "Piero, of whom I remember that the sister married a general (= whose sister ...), ...
    (b) *Piero, di cui non ricordo se la sorella abbia sposato un generale o un colonnello, ...
    "Piero, of whom I do not remember whether the sister married a general or a colonel (= whose sister ...), ...

Again, this contrast is predicted by my hypothesis: in case of extraction from the subject of a declarative clause, the PP can be moved in two steps, cycle after cycle, to the higher COMP, and no violation of subjacency is involved; in case of extraction from the subject of an interrogative clause, the movement in two steps is blocked because the interrogative complementizer is already filled, and the extraction in one step is blocked by subjacency.

In conclusion, if 1) the alternative approach to the extraction problem sketched out in footnote 16 is incorrect, and 2) the less than fully sharp character of the contrasts in (25), (26), (27) is due to the interacting factors suggested in footnote 17, then the prediction schematically represented in (24) is correct, and our analysis receives further confirmation.

More interestingly, these facts provide independent evidence for the bounding nature of the NP node: our explanation of the unacceptability of (25)b to (31)b mirrors Chomsky's (1973) explanation of the Complex NP Constraint, in that both accounts crucially involve the Subjacency Condition and presuppose the bounding character of S' (or S) and NP, the only difference consisting in the relative embedding of such nodes. This can be
seen in the following rough representations:

(32) a

\[
S' \rightarrow \text{NP} \rightarrow S' \rightarrow X
\]

6. So far I have been assuming a formulation of TSC and SSC such that the “escape hatch” nature of the COMP position doesn’t follow from any independent property of the theory, i.e., requires a special stipulation (as in Chomsky 1973, 1976, 1977a). My proposal fits very well in such a framework: as far as a language-specific stipulation is needed in any case, in no sense is (11) (or (i) of footnote 12) less legitimate than (4).

But this approach to the problem is not logically necessary: one could reasonably conceive different formulations of the conditions such that the “escape hatch” nature of COMP follows automatically, and need not be stipulated. This is exactly the line of inquiry pursued by Chomsky in further elaborations of the framework (see Chomsky 1980a for extensive discussion). In this reformulated framework, TSC and SSC do not directly constrain the actual application of transformations (which is solely constrained by subjacency), but apply as well-formedness conditions on the level of logical form (LF). TSC and SSC are reformulated in the following statement, which is generally referred to as “opacity principle”:

(33) In the structure

\[
[\alpha \cdots \beta \cdots]
\]

where \(\alpha\) is S' or NP, and \(\beta\) is an anaphor (in a sense to be specified below),\(^{19}\) \(\beta\) cannot be free in \(\alpha\) if

SSC: \(\beta\) is in the domain\(^{20}\) of the subject of \(\alpha\), or

TSC: \(\beta\) is in the domain of the tense of \(\alpha\).

It is obvious that the “escape hatch” nature of COMP follows from this formulation: given the standard tree

(34) COMP

\[
S' \rightarrow \text{NP} \rightarrow \text{TENSE} \rightarrow \text{VP}
\]
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an “anaphor” cannot be free in S’ (= must be bound by some element internal to S’) if it is dominated by S, because in this case it is c-commanded by TENSE and (if in non-subject position) by the subject. On the contrary, an “anaphor” can be free in S’ (i.e., not bound by any element internal to S’) if it is in COMP, since in this case it is not c-commanded by the subject, nor by TENSE.\(^2\)

Therefore, given this reformulation, (4) need not be stipulated (at least for the second half) as a language-specific exception to the conditions. But, if this conclusion is correct, then the recourse to something like (i) of footnote 12 in order to account for our data becomes less obviously legitimate: first of all, it can’t be considered the natural counterpart of other language specific stipulations any more; secondly, it makes crucial reference to the position of the possible antecedents of \(\beta\) outside \(\alpha\), thus nullifying one of the most appealing features of Chomsky’s new formulation, i.e., its (essentially) “local” character. I will therefore consider the possibility that the solution adopted so far is to be abandoned. But, in this case, how can the quasi-observational statement (11) be integrated within a coherent theory, in the spirit of Chomsky’s recent proposal?

In order to give a tentative answer to this question, let’s consider first the domain of application of the opacity principle in Italian:

\[(35)\]
\[
\begin{align*}
(a) & \left[\text{NP } e\right. \text{ fu ordinato } \left[ S, \text{di PRO legare } \left[ \text{NP}_k i \text{ prigionieri} \right] \right] \\
& \text{“(It) was ordered to fasten the prisoners.”}
\end{align*}
\]

\[
(b) *\left[\text{NP}_k i \text{ prigionieri} \right. \text{ furono ordinati } \left[ S', \text{di PRO legare } \left[ \text{NP}_e \right. \right] \right]
\]

\[(36)\]
\[
\begin{align*}
(a) & \left[\text{NP } e\right. \text{ è stato detto } \left[ S, \text{che } \left[ \text{NP}_k i \text{ tuoi amici} \right] \text{ sono partiti} \right] \\
& \text{“(It) has been said that your friends have left.”}
\end{align*}
\]

\[
(b) *\left[\text{NP}_k i \text{ tuoi amici} \right. \text{ sono stati detti } \left[ S, \text{che } \left[ \text{NP}_e \right. \right] \text{ sono partiti} \right]
\]

\[(37)\]
\[
\begin{align*}
(a) & \text{Mario pensa } \left[ S, \text{di PRO conoscere } \left[ \text{NP } e\right. \right] \right]
\text{“(Mario thinks ‘to’ know-her = Mario thinks he knows her).”} \\
(b) *\text{Mario la pensa } \left[ S, \text{di PRO conoscere } \left[ \text{NP}_e \right. \right] \right]
\]

\[(38)\]
\[
\begin{align*}
(a) & \text{Gianni e Piero si parlavano.} \\
& \text{“Gianni and Piero talked to themselves/to each other.”}
\end{align*}
\]

\[
(b) *\text{Gianni e Piero volevano che tu si parlassi.} \\
& \text{“Gianni and Piero wanted you to talk to yourselves/to each other.”}
\end{align*}
\]

If no transformation applies on structure (35)a, an acceptable sentence is derived, but if NP movement applies the derived structure (35)b is ungrammatical: according to (33), its ungrammaticality is due to the trace \(\left[\text{NP}_e \right.\) (counting as “anaphor”) which is free in the embedded clause, and c-commanded by the subject (i.e., the generic, phonetically non-realized subject PRO). Similarly, (36)b, derived from (36)a via NP movement, is out because the trace \(\left[\text{NP}_k i \text{ prigionieri} \right.\) is free in \(S'\) and c-commanded by tense. (37)b, ungrammatical counterpart of (37)a, is out because the trace left behind by clitic movement is free in the embedded clause (while it is locally bound in (37)a). Finally, in (38)a the clitic pronoun \(s_i\) allows both reflexive and
reciprocal interpretation; in (38)b both interpretations are excluded, and the structure is ungrammatical, since the "anaphor" si is free in the embedded clause, and c-commanded by subject and tense. In conclusion, the opacity principle (33) makes the right predictions when the traces left behind by NP movement and clitic movement, and the reflexive-reciprocal pronouns are interpreted as "anaphors" in the sense required by the proposed formulations.

Consider now the structure derived via wh movement. Recall that, according to our proposal, the surface structure of a sentence like (6)a would be

(39)  Il solo incarico i che non sapevi [ S, a chi j avrebbero affidato [NP i e [PP j e]]

In (39) the trace [NP i e] of the relativized element is free in S', and c-commanded by subject and tense; therefore, according to (33), this structure should be rejected, contrary to fact. Now, the question is: why doesn't the opacity principle apply to the traces left behind by wh movement? and, more specifically, why do the traces left behind by wh movement behave differently, with respect to opacity, from the traces left behind by NP movement and clitic movement?

While I am not able, for the time being, to give a complete answer to this question, it seems to me that independently motivated aspects of the syntax of the logical form for wh constructions can provide a not unnatural way to make the appropriate distinction. I will assume here that the appropriate logical forms of the wh constructions exemplified in (40) are (41):

(40)  (a) Who did you see?
     (b) The man that you saw
(41)  (a) For which x, x a man, you saw x
     (b) The man x such that you saw x

I will further assume that the surface structures of sentences (40) are mapped into the logical forms (41) via rules of the type discussed in Chomsky (1976, 1977a). In particular, I will assume that variables x, y, z, . . . are substituted for the traces left behind by (the first applications of) wh movement (this informal characterisation is not entirely accurate; see the references just quoted for detailed discussion). Given this theory, it is now possible to account for the difference between (35)b–(38)b and (39). The LF corresponding to the surface structure (39) will be (omitting irrelevant details)

(42)  Il solo incarico x tale che non sapevi [S per quale y avrebbero affidato x a y]

If we now assume that the opacity principle applies on fully developed logical forms, there is no distinction, i.e., the elements in the logical form corresponding to reciprocal (39) it would be:

+ anaph * - anaph

This device (35)b–(38)b do not differ relevant types by subject and tense in the embedded sentence x does not have "anaphors", the approach stipulation is displaced by subject a is hard to the more general rule about than it will turn out discussed in the above.
ons are excluded, and "si" is free in the d tense. In conclusion, ns when the traces left he reflexive-reciprocal sense required by the movement. Recall that, of a sentence like (6)a

uij avrebbero affidato

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tions of) wh movement rate; see the references tory, it is now possible to id (39). The LF corres
g irrelevant details)

: quale y avrebbero affi-

on fully developed logi-

cal forms, and that for the output of NP movement and clitic movement there is no variable substitution rule of the type operative in the wh constructions, then we have at our disposal a device to make the appropriate distinction. Suppose that (as Noam Chomsky suggests to me) the choice of the elements which count as "anaphors" can vary, at least in part, from language to language. As the examples (35)-(38) show, traces, reflexive and reciprocal pronouns count in this sense, in Italian. In order to account for (39) it would now be sufficient to stipulate that this is not the case for the variables inserted in the LF of the wh constructions. In other words, the following disjunction would hold for Italian:

+ anaphors: \[ x, e \], 23 REFLEXIVE, RECIPROCAL, . . .
- anaphors: PRON, 24 x, y, z, . . .

This device accounts for the difference between (35)b-(38)b and (39): (35)b-(38)b are ill-formed because the corresponding logical forms (which do not differ crucially from the surface structures) have "anaphors" of the relevant type which are free in the embedded clauses, and c-commanded by subject and/or tense. In the logical form (42) the variable X is itself free in the embedded clause, and in the domain of both subject and tense; but since X doesn't belong to the language-specific inventory or possible "anaphors", the opacity principle does not mark this structure as ill-formed.

The approach I have tentatively suggested in this section differs from the approach proposed in the preceding sections in that the language-specific stipulation (needed in any case, as far as languages differ from each other) is displaced from the "escape hatch" to the inventory of possible "anaphors". Whether or not these two solutions are empirically distinguishable is hard to determine. The choice between them is rather a consequence of the more general choice between two different ways of regarding conditions on rules: if the approach represented in (33) proves to be more adequate than the classical one, then the account sketched out in this paragraph will turn out to be more appropriate than the preceding one for the data discussed in this paper. 25

7. We have seen in paragraph 3 that if a wh element is extracted from a declarative clause embedded in an indirect question the result is unacceptable (cf. (18)b-(21)b). But if we substitute an infinitival complement for the tensed declarative then the resulting structure is more acceptable, if not fully natural. 26

(a) *Quest'uomo, che non so se ritieni che Mario conosca abbastanza bene, ci potrebbe essere molto utile.

"This man, that I do not know whether you believe that Mario knows well enough, could be very useful for us."

(b) ?Quest'uomo, che non so se ritieni di conoscere abbastanza bene, ci potrebbe essere molto utile.

---

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"This man, that I don't know whether you believe 'to' know well enough, could be very useful for us."

(44)  
(a) *Mario, che non immagino perché tu abbia deciso che non incontrerai, è una brava persona.
  "Mario, that I do not imagine why you have decided that you will not meet, is a nice fellow."
(b) ?Mario, che non immagino perché tu abbia deciso di non incontrare, è una brava persona.
  "Mario, that I do not imagine why you have decided not to meet, is a nice fellow."

I will now assume, as a working hypothesis, that the marginal status of the preceding b examples can be attributed to some independent factor (e.g., complexity); under this assumption, the preceding contrasts would lead us to the non-trivial conclusion that the infinitival complements of the b examples are not dominated by a bounding node: otherwise, the extraction of the relative pronoun in b should give as bad a result as the extraction in a, since subjacency would be violated in both cases.

Instead of trying to determine exactly which non-bounding category the infinitival complements in b could belong to,21 I will now show that not all infinitival clauses behave in the same way: while infinitival complements of verbs behave differently than tensed complements, infinitival questions behave exactly like tensed questions in not allowing wh extractions in the relevant configuration: the following pair is to be compared with (13)–(15):

(45)  
(a) Non immagino chi sappia dove portare i tuoi ospiti.
  "I do not imagine who knows where to take your guests."
(b) *I tuoi ospiti, che non immagino chi sappia dove portare, ...
  "Your guests, that I don't imagine who knows where to take, ...

In the following contrast, the most deeply embedded infinitival clause is a verbal complement in a, and a question in b: while a is marginally acceptable, b is definitely ungrammatical:

(46)  
(a) ?La sola questione che non so ancora a chi chiedere di affrontare è la più delicata.
  "The only question that I do not yet know whom to ask to face is the most delicate."
(b) *La sola questione che non sa ancora a chi chiedere quando affrontare è la più delicata.
  "The only question that I do not yet know whom to ask when to face is the most delicate."

If our analysis is correct, and provided that some independent explanation can be found for the marginal status of (43)b, (44)b, (46)a, then such
you believe 'to' know "

*bibia deciso che non in-

have decided that you

*bibia deciso di non in-

have decided not to

marginal status of the

dependent factor (e.g.,

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then show that not all

infinitival complements: 1) bare infinitival clauses [NP VP] with the subject NP

lexically realized, and 2) control structures di PRO VP, introduced by the

preposition di, and with the PRO subject position controlled by the main

subject. These two constructions are examplified in (47)a–b. 24 Consider

now the contrast (48)a–b: while wh extraction from (47)b is marginally

acceptable, as in the preceding cases considered in this paragraph, wh

extraction from (47)a is impossible:

(47) (a) Mi domando quante persone riteni poter pagare un simile riscatto.

"I wonder how many people you believe to be able to pay such ransom."

(b) Mi domando quante persone ritengano di poter pagare un simile riscatto.

"I wonder how many people believe 'to' be able to pay such a ransom = ... how many people believe they are able ..."

(48) (a) Un simile riscatto, che mi domando quante persone riteni

poter pagare, è altissimo.

"Such a ransom, that I wonder how many people you believe to be able to pay, is extremely high."

(b) Un simile riscatto, che mi domando quante persone ritengano

di poter pagare, è altissimo.

"Such a ransom, that I wonder how many people believe 'to' be able to pay, is extremely high."

It is interesting to notice that the infinitival construction examplified in

(47)a is one of the most plausible candidates, in Italian syntax, for an infti-

tival verbal complement whose subject can (and must) be lexically realized

in deep structure. 29 It is therefore not inconceivable that the class of infti-

tival verbal complements which behave as belonging to a bounding category

with respect to our test could turn out to be coextensive with the class of

verbal complements which can (and must) have a lexical subject. This des-

criptive generalization is discussed in detail in chapter III.

This construction permits to provide an interesting confirmation to the

hypothesis put forth in paragraph 4. Consider the following contrast:

(49) (a) ?Gianni, che mi domando che cosa riteni che abbia fatto, comunque non merita una simile punizione.

"Gianni, that I wonder what you believe that has done, anyhow doesn't deserve such a punishment."
(b) *Gianni, che mi domando che cosa ritieni aver fatto, comunque non merita una simile punizione.

"Gianni, that I wonder what you believe to have done, anyhow doesn't deserve such a punishment."

In paragraph 4 we accounted for the marginal acceptability of sentences like (49)a (which should be excluded according to the analysis presented in paragraph 3) by assuming that they are instances of the substandard relative construction which makes crucial use of a resumptive pronoun, and that no movement is involved in their derivations. Recall now that in Italian:

1) resumptive pronouns can only be unstressed;
2) unstressed subject pronouns are obligatorily deleted (alternatively, are not phonetically realized).

From these two conditions it follows that a sentence like (49)a should be impossible if, for some reason, PRO drop (or φ realization) were inapplicable. But this is exactly what happens in cases like (49)b, since PRO drop (or φ realization), which can freely apply in tensed sentences, is blocked in infinitival sentences (see Chapter IV for relevant discussion). In short, (49)b cannot be derived via wh movement of the embedded subject, since such a derivation would violate subjacency, and cannot be derived as relative with a subject resumptive pronoun, since, in general, the only possible subject resumptive pronoun (i.e., φ) cannot be found in infinitives. Therefore the minimal contrast (49)a–b provides new evidence for the analysis presented in section 4.

8. Appendix: Indirect questions and free relatives.

Consider the following two sentences:

(50) (a) So chi ha telefonato a Maria.
    "I know who rang up Maria."
(b) Ho punito chi ha telefonato a Maria.
    "I have punished who rang up Maria."

The underscored string in (50)a is an embedded question, and in (50)b is a free relative. It is well known that these two constructions, despite of their surface similarity, must be kept distinct for several syntactic and semantic differences (see Baker 1968; Bresnan 1973).

I would like to point out here one more syntactic difference, which can be explained in the framework adopted in this work. The difference in question is that a relative pronoun can be extracted from the embedded question, but not from the free relative:

(51) (a) Maria, a cui so chi ha telefonato, ...
    "Maria, (to) whom I know who rang up, ..."
(b) *Maria, a cui ho punito chi ha telefonato, ...
    "Maria, (to) whom I have punished who rang up, ..."
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\[\text{Preferisco che tu parli direttamente a Mario.}\]
\[
\text{Preferisco chi ha parlato direttamente a Mario.}\]

\[\text{Mario, a cui preferisco che tu parli direttamente, ...}\]
\[
\text{Mario, a cui preferisco chi ha parlato direttamente, ...}\]

Therefore, it seems highly plausible that the impossibility of extracting from free relatives is due to structural reasons.

I would like to suggest that this reason is the Complex NP Constraint. In base structure, (50)a-b differ, plausibly, as follows:

\[\text{Mario, a cui preferisco che tu parli direttamente, ...}\]
\[
\text{Mario, a cui preferisco chi ha parlato direttamente, ...}\]

I will assume that the \textit{wh} pronoun \textit{chi} is moved into COMP at the \textit{S}_1 cycle in both cases, and that, in (54)b, it is further moved, at the NP cycle, to the head position of the relative clause.31 The resulting structures are the following:

\[\text{Mario, a cui preferisco che tu parli direttamente, ...}\]
\[
\text{Mario, a cui preferisco chi ha parlato direttamente, ...}\]

Now, according to the hypotheses proposed in this work, the relative pronoun can jump to the relative COMP at the \textit{S}_1 cycle in (55)a, but not in (55)b, because such a movement is blocked by subjacency. According to this analysis, the contrast (51)a-b ultimately follows from the hypothesis that, in Italian, \textit{wh} movement doesn’t obey opacity, but does obey sub-

NOTES

2. If S, and not \textit{S}’, is the bounding node which counts for subjacency (as proposed in Chomsky (1977a)), any one-step movement of X to a higher COMP position is also blocked.
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by subjacency. I will assume here, for the sake of simplicity, that S', is the relevant bounding node, and that TSC and SSC only are involved in the explanation of the Wh Island Constraint. This point will be discussed with some care in footnote 25.

3. This remark holds true for the framework proposed in the references quoted in footnote 1, but would be incorrect with respect to the restatement of the conditions in more recent versions of the framework. In this restatement, the "escape hatch" nature of COMP follows from the form of the conditions themselves, and need not be stipulated in single grammars. The compatibility of this approach with my analysis will be discussed in detail in paragraph 6.

4. To be more precise, the relative clause is introduced by a relative pronoun (which is, in turn, introduced by a preposition) in (6)b and (6)c, while it is introduced by the unmarked complementizer che in (6)a. I assume here, following the analysis proposed for French by Kayne (1974), that (6)a is derived via movement of an object (prepositionless) relative pronoun to COMP, which is subsequently deleted, leaving in COMP the unmarked complementizer che.

5. There is at least one significant difference between structures of the type (7) and double wh questions like (8): the former are considerably improved if the wh phrase which is extracted is made "heavier":

(i) (a) ??A chi non ti ricordi quanti soldi hai dato?
   "To whom don't you remember how much money you gave?"
(b) A quale dei tuoi figli non ti ricordi quanti soldi hai dato?
   "To which one of your sons don't you remember how much money . . ."

While double wh questions cannot be significantly improved in this way.

6. There are also other ways of constructing relative clauses in Italian, which is slightly substandard, but widely used in informal speech: the relative clause is introduced by the unmarked complementizer che, and contains a resumptive pronoun interpreted as anaphoric to the head of the relative. The derivation of this alternative construction doesn't plausibly involve any kind of movement, and, as expected, it doesn't obey the complex NP constraint (the symbol "%" is used here to characterize the peculiar stylistic level of this construction; the resumptive pronoun is underscored):

(i) %Questo incarico, che non sapevo la novità che lo avrebbero affidato a te, . . .
   "This task, that I didn't know the news that they it would entrust to you, . . ."
(ii) %Tuoi fratello, che temo la possibilità che gli abbiano raccontato tutto, . . .
   "Your brother, that I am afraid of the possibility that they to-him have told everything, . . ."
(iii) %La nuova idea di Giorgio, che immagino facilmente l'eventualità che Piero ne pensi male, . . .
   "Giorgio's new idea, that I easily imagine the event that Piero of-it has a bad opinion, . . ."

7. The element che used in this case is an interrogative specifier (corresponding to English which), which shouldn't be confused with the unmarked complementizer che of (6)a. Interrogative che can appear in sentence-internal/final position: both the following sentences are acceptable:

(i) Di che cosa gli hai parlato?
   "Of which thing (did you) to-him talk?"
(ii) Gli hai parlato di che cosa?

8. This derivation only violates the strict cyclicity condition under the assumption that TSC and SSC constrain the actual application of transformations. But, if TSC and SSC are interpreted as conditions on the antecedent-trace relations, operating on logical forms,
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then derivation (A) would also violate TSC and SSC, for reasons indicated in Freidin (1978).

9. Notice that the subjacency condition is not violated, under the assumption that the relevant bounding node is S'.

10. There are possible variants of this solution. The most obvious could consist in proposing that more than one COMP node per clause can be generated by the base rules of Italian. This proposal can be found in Ertesich (1973) for Danish, and in Reinhart (1977) for some marginal cases in English.

11. It should be noticed that solution (B) also violates the Superiority Condition (see Chomsky 1973). But this condition seems to be suspect on independent grounds: as Richard Kayne and Robert Freidin pointed out to me, sentences like the following (from Kayne and Pollock 1977), whose derivation should be blocked by superiority, are reasonably acceptable:

(i) ?Which girl did which boy photograph?

It is therefore at least plausible that the facts which are explained via superiority in Chomsky (1973) should be treated in a different way.

12. Alternatively, in the quasi-formal format used for (4),

(i) ... unless X is in COMP.

13. In this case too, the substandard relatives roughly corresponding to structure (17)b seem reasonably acceptable:

(i) %Il tuo libro, che Gianni non si ricorda più a chi ha detto che lo ha lasciato sul tavolo, è ormai introvabile.

(ii) %Il mio primo libro, che so a chi so a chi credi che/o abbia dedicato, mi è sempre stato molto caro.

14. Or, at least, relative movement, if the contrast (6)-(7) turns out to be relevant.

15. As far as I can see, the crucial facts presented to substantiate this conclusion cannot be handled within the unbounded theory of transformations proposed by Bresnan (1975, 1976): if the rule which moves relative pronouns to COMP (alternatively, deletes an element under non-distinctness with the head) is unbounded, and if, in Italian, it can extract a relative pronoun out of an embedded question (alternatively, delete an element within an embedded question under non-distinctness with a higher head), there is no principled reason why it couldn't extract (delete) the relative pronoun in structures like (12), (17)b, while being able to extract (delete) it in the case of sentences (6), and in structures like (17)a. Therefore, these facts can be viewed as an argument for a bounded theory of relative movement.

16. It should be preliminarily noticed that, in general, wh extraction from NP is governed by different types of lexical idiosyncrasies. In particular, as the following sentences show, only wh extraction of PP's introduced by the preposition di seem to be fully natural:

(i) (a) Apprezzo la fedeltà di Mario.
   "I appreciate the loyalty of Mario (= Mario's loyalty)."
   (b) Mario, di cui apprezzo la fedeltà, ...

(ii) (a) Apprezzo la fedeltà a questo ideale.
   "I appreciate the loyalty to this ideal."
   (b) ??Questo ideale, a cui apprezzo la fedeltà, ...

This fact could suggest a radical solution to the "extraction" problem. Suppose that no extraction at all were possible from NP's, that a prepositional phrase of the type di NP could be generated in sentence-initial position (this is independently necessary: See Barbaud...
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(1976), and that this PP, accessible to relativization, could be construed with a NP in the sentence, provided that special semantic conditions are fulfilled.

It is obvious that if something like this approach turned out to be correct, the facts discussed in this paragraph would be irrelevant for the present discussion. But notice that this approach has a major disadvantage: it doesn't explain the fact that the "extracted" PP cannot be construed with a NP which is embedded in a PP: compare (i)b with the following:

(iii) *Mario, di cui conto sulla fedeltà, ..." Mario, of whom I count on the loyalty (= on whose loyalty ... )"

While this fact is explained by the extraction analysis, via A/A, (Kayne (1975)), or via subjacency.

17. There are two factors which could affect the correct acceptability judgements on such sentences as (25)b–(27)b. First of all, these sentences should not be confused with the following, which are fully acceptable:

(i) Francesca, di cui ( ) non so dove ( ) hai conosciuto la sorella, ... (ii) Questo autore, di cui non ricordo chi mi ha mostrato il primo libro, ... (iii) Gianni, di cui ( ) immagino in che occasione ( ) hai visto la foto sul giornale, ...

These sentences are radically different in constituent structure with respect to the sentences discussed in the text (while the respective terminal strings minimally differ in that the embedded verbs are in the subjunctive mood in (25)b–(27)b, and in the indicative mood in (i), (ii), (iii)), as indicated below:

(iv) (a) Francesca, di cui non so [ _ ] dove tu abbia conosciuto la sorella ]
     (b) Francesca, di cui [ _Adv non so dove ] hai conosciuto la sorella
(v) (a) Questo autore, di cui non ricordo [ _ ] chi mi abbia mostrato il primo libro ]
     (b) Questo autore, di cui [ _ NP non ricordo chi ] mi ha mostrato il primo libro
(vi) (a) Gianni, di cui immagino [ _ ] in che occasione tu abbia visto la foto sul giornale ]
     (b) Gianni, di cui [ _PP immagino in che occasione ] hai visto la foto sul giornale]

As these structures show, non so, non ricordo, immagino are main verbs in (25)b–(27)b (i.e., (iv)a–(vi)a), but are nominal or adverbial modifies in (i)–(iii)(i.e., (iv)b–(vi)b). It is obvious that only the unacceptable (iv)a–(vi)a are relevant for the present discussion, and should be kept carefully distinct from the acceptable structures (iv)b–(vi)b.

Secondly, in order to get the correct judgements it is necessary to require the reading of (25)b–(27)b in which the wh phrase di cui is explicitly construed with the respective NP in the most deeply embedded clause. Otherwise, these sentences could be marginally rescued by interpreting di cui as construed with the predicate of the relative clause, in a topic-like interpretation (i.e., speaking of whom). For instance, in this reading, (27)b would be marginally acceptable as synonymous of the following:

(vii) Gianni, a proposito del quale immagino in che occasione tu abbia visto la foto sul giornale, ... "Gianni, speaking of whom, I imagine in which occasion you have seen the picture on the newspaper, ..."

with la foto pragmatically interpreted as being Gianni's picture.

If these two possible interacting factors are properly eliminated, it seems to me that sentences like (25)b–(27)b turn out to be totally unacceptable, as expected.

18. Of course, as for the preceding example, this sentence should not be confused with the grammatical structure:

(i) Gianni, di cui [ _ PP non so su che giornale ] una foto è apparsa recentemente, ...
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19. The term "anaphor" is used here instead of "variable" in order to avoid confusion with the different use of the term "variable" which is made below.

20. A node B is in the domain of a node A when A \( \phi \)-commands B. A \( \phi \)-commands B if A doesn't dominate B and the first branching node which dominates A dominates B too. For further details on this notion see Reinhart (1976).

21. For instance, consider the derivation of (3) via successive cyclic movement of the \( wh \) pronoun; the surface structure will be:

\[
(i) \quad \text{Who, do you think} \ [s'_1 \text{COMP e}_1] \text{Bill saw e}_1
\]

I do not distinguish here between surface structure and logical form, in order to make things easier; I will furthermore assume that the trace counts as "anaphor". In (i), no violation of opacity is involved because 1) the first occurrence of the trace is not free in \( S'(=a) \), because it is bound by the second occurrence, and 2) the second occurrence is free in \( S' \), but not \( \phi \)-commanded by the subject, nor by TENSE, since it is in COMP.

A different approach to this problem is proposed in this paragraph for Italian. The possible extension of this approach to English is briefly discussed in footnote 25.

22. In particular, there is no trace bearing the same index \( i \) in the embedded COMP position since, according to our proposal, the relative pronoun has been moved directly to the relative COMP.

23. This representation in terms of the X-bar notation simply indicates the traces left behind by any movement of major phrases.

24. I am using this symbol for personal non-reflexive non-reciprocal pronouns.

25. An interesting problem which both accounts should face concerns learnability. Let's assume that English and Italian differ in the choice of the anaphors relevant for the opacity principle, i.e., that the variable substituted for a trace in the logical form of a \( wh \) construction counts as anaphor in English, but not in Italian. From this difference it follows that, ceteris paribus, English obeys the \( Wh \) Island Constraint, and Italian does not. But the question is: how can this difference be learned? Unless one makes the simple assumption that the difference is learned via direct evidence (i.e., that, English being the unmarked case, the child exposed to Italian learns the relevant property of his grammar by hearing a sufficient number of violations of the \( Wh \) Island Constraint), it would be highly desirable to find out that this difference correlates with other differences in the grammars of the two languages, and, more generally, that the language-specific membership of the class of anaphors which count for opacity is at least partly predictable from other properties of the grammar. But, for the time being, I do not have very much to say on this point.

Other approaches to account for the difference between the two languages come to mind. A not unreasonable one could be the following: let's assume that the two languages do not differ in the choice of anaphors relevant for opacity, so that in English, as in Italian, the variable substituted for a trace in the LF of a \( wh \) construction doesn't count as anaphor. If this were true, then the \( wh \) Island Constraint in English couldn't be explained via opacity. The obvious alternative would be subjacency: it's easy to verify that, if one were to assume that English and Italian differ in the choice of the bounding nodes which count for subjacency in that such nodes are NP and S for English, and NP and S' for Italian, then it would follow, quite independently from opacity, that English, but not Italian obeys the \( wh \) Island Constraint. And, at first glance, this difference does have an interesting correlate: the main motivation for S being a cyclic node in English is the explanation of the Subject Constraint (Horn 1974; Chomsky 1977a), i.e., the fact that, in English, an adnominal complement of the subject cannot be \( wh \) extracted. Now, I have already given three examples ((29)a, (30)a, (31)a) which show that \( wh \) extraction from a subject is possible in Italian. Consider now

\[
i i \quad \text{L'uomo di cui ritengo che la sorella maggiore sia inamorata di te e Gianni.} \\
\text{"The man of whom I believe that the elder sister is in love with you is Gianni (= the man whose elder sister ...)"}
\]

\[
(ii) \quad \text{I autore di cui alcuni racconti sono stati pubblicati recentemente è mio fratello.} \\
\text{"The author of whom some stories have been published recently is my brother."}
\]
The non-fully-productive character of this process could suggest that the difference between Italian and English with respect to the Subject Condition is less sharp than a purely structural solution would predict (to make things even more complicated, in English too the Subject Condition can be violated in some cases, as pointed out in Gueron (1975)). The same remark can perhaps be extended to the comparative study of the Wh Island Constraint in Italian and English. In the sketchy comparative statements I have made in this paper, it is implicitly assumed (as almost always in the current literature) that the Wh Island Constraint can never be violated in English. But this is incorrect: Reinhart (1977) has shown that it can be violated systematically (though somewhat marginally) in certain cases. Therefore, a careful comparative study should be qualified accordingly. But, given the unclear nature of some crucial data, I will not pursue here such a more systematic comparative study. (Sentences violating the Wh Island Constraint seem to be acceptable, at variable degree of marginality, in other languages as well, e.g., in French, as pointed out by Kayne and Pollock (1977, fn. 47)).

26. The relevance of this fact was brought to my attention by Richard Kayne.

27. Two obvious candidates come to mind: S (which we have already shown to be non-cyclic in Italian) and VP (as in Bresnan 1978). Both possibilities have advantages and disadvantages which I will not discuss here. I will simply point out that, since in general the specified subject condition applies to infinitival complements in Italian (see chapter I for discussion), both choices would require some qualifications on (33).

If S is adopted, the only qualification that is needed concerns the definition of α: α should include not only NP and S but also S, exactly in those cases in which it is not dominated by S (in other words, α = NP or S, with maximal).

If VP is adopted, a more radical modification would be needed, for the obvious reason that in a bare infinitival VP there is no structural subject. Two possibilities are available: 1) a non-purely structural definition could be given of the condition (that is to say, not in terms of c-command, and making reference to a non structural definition of subject); 2) one could maintain the structural definition of the condition, and introduce a clause-building rule in the syntax of the logical form of the infinitival VP’s, such that, at the level of logical form (i.e., at the level on which the condition applies), infinitival VP’s do have a structural subject.

At first glance, this complication seems to indicate that the choice of S is more appropriate, in the framework I have adopted here than the choice of VP. But I am not sure that this conclusion would be correct. There are other clear cases of surface constructions which do not satisfy the structural requirements of (33), and nevertheless obey opacity (consider, for instance, the construction V NP AP with verbs like believe, get, keep, etc., discussed in van Riemsdijk (1976), Bresnan (1978), in which the direct object NP behaves like the "specified subject" of the following AF); such constructions would require in any case the "complication" (non-structural definition of the condition, or clause-building rule in the syntax of LF) which is required, in this framework, by the choice of the bare VP complements. In any case (the two alternatives being perhaps notational variants) I will leave the question open.
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Notice that with a restricted class of main verbs sentences like (43)b—(44)b are fully acceptable:

(i) Mario, che non immagino perché tu non voglia incontrare, è una brava persona. “Mario, that I don’t imagine why you don’t want to meet, is a nice fellow.”

But this fact is irrelevant: We have shown in chapter I that verbs like volere trigger a restructuring process which reanalyzes the sequence volere + embedded verb as a single verbal complex, thus destroying the bysentential structure. Given this analysis, the full acceptability of (i) is not surprising, since “restructured” structures behave as simple sentences with respect to several syntactic processes (e.g., clitic placement, auxiliary assignment, etc.).

Sentence (44)b has an intermediate acceptability status between (44)a and (i). In the text I have tentatively suggested that the right bifurcation in the continuum of these judgements is (44)a vs (44)b and (i), and that (44)b is therefore to be directly generated by the grammar; but a not unreasonable alternative could be to displace the grammaticality boundary between (44)a—b and (i), and to treat the marginal acceptability of (44)b and similar structures in terms of derivative generation. If this alternative is correct, then no structural difference between tensed and untensed verbal complements is to be represented in the grammar.

28. If no transformation applies to a structure of the type ritenere [NP VP] destroying this configuration, the corresponding surface structure is unacceptable. The structure underlying (47)a is rescued by the application of wh movement, which extracts the embedded subject destroying the forbidden configuration. See chapter III for detailed discussion.

29. Other classical candidates are the infinitival complements of subject to subject raising verbs and the causative construction (if we extend to Italian the analysis proposed for French by Kayne 1975). The discussion of these two constructions in the present context would require a detailed analysis of the infinitival syntax in Italian, which I will not develop here.

30. This can be shown easily. Consider the following sentences:

(i) (a) Tua sorella ha parlato a Mario ieri. “Your sister talked to Mario yesterday.”

(b) Tua sorella ha parlato con Mario ieri. “Your sister talked with Mario yesterday.”

(ii) (a) Tua sorella gli ha parlato ieri.

(b) Tua sorella ha parlato con lui ieri.

The verb parlare can take an indirect object, as in (i)a, or a prepositional object, as in (i)b. The former, if pronominal, can be criticized, as in (ii)a, while the latter doesn’t have any non stressed pronominal form (the pronoun lui in (ii)b is the ordinary stressed form). Now, a relative clause with a resumptive pronoun can be constructed from (i)a, (ii)a, but not from (i)b, (ii)b:

(iii) (a) %Mario, che tua sorella gli ha parlato ieri, . . .

(b) *Mario, che tua sorella ha parlato con lui ieri, . . .

31. As proposed by Bresnan (1973). This assumption is necessary to the extent that:

1) a bounding node that exhaustively dominates another bounding node doesn’t count for subjacency;

2) in the structure (54)b, NP exhaustively dominates S'.

If one (or both) of these two assumptions is incorrect, than the movement of the wh pronoun into the empty head position need not be postulated. Notice that, if Bresnan’s solution is adopted, then some special proviso is to be added in order to prevent the appearance of the unmarked complementizer che in the embedded COMP.

32. A difference which could be traced back to the same explanatory principle (under plausible assumptions on deletion rules; see Koster (1976)) concerns the application of gap-
ping: this rule can apply on a conjunction of indirect questions, but not on a conjunction of free relatives:

(i)  
(a) Non ho ancora capito chi ha telefonato a Maria e chi ha telefonato a Giuliana.
    "I haven't yet understood who called up (to) Maria and who called up (to) Giuliana."
(b) Non ho ancora capito chi ha telefonato a Maria e chi — a Giuliana.

(ii)  
(a) Ho punito chi ha telefonato a Maria e chi ha telefonato a Giuliana.
    "I have punished who called (up) to Maria and who called up (to) Giuliana."
(b) *Ho punito chi ha telefonato a Maria e chi — a Giuliana.

If we assume that this kind of deletion is constrained by subjacency (or by some closely related principle), then the contrast (i)b—(ii)b follows from the proposed structural difference between embedded questions and free relatives. The respective structures would be:

(iii) Non ho ancora capito $S, [S, \text{chi ha telefonato a Maria}] e [S, \text{chi ha telefonato a Giuliana}]$

(iv) Ho punito $\text{NP, } [\text{NP, } \text{chi ha telefonato a Maria}] e [\text{NP, } \text{chi ha telefonato a Giuliana}]$.

Now, the string to be deleted is subjacent to the controller string in (iii), at least under some possible definitions of subjacency, while this is not the case in (iv), under any conceivable definition of subjacency.