ANOTHER TYPE OF SURPRISING ASYMMETRY

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This article claims that the alteration between the interrogatives whom and accusative who, which is commonly considered to be stylistic, is, indeed, much more closely linked to syntax than to stylistics. It will be shown that sentences involving such alterations manifest what Pesetsky 1984 calls SURPRISING ASYMMETRY, and I will defend this claim with the aid of Rizzi’s 1990 framework, which elegantly handles Pesetsky’s asymmetry. As the discussion advances, it will be demonstrated both that whom, an overtly morphologically declined counterpart of accusative who, must somehow have its accusative Case realized, and that it is AGR-O that accomplishes this Case-realization. Furthermore, the work presented below will also elucidate the significance of the distinction between Case-assignment and Case-realization in syntactic theory.*

1. INTRODUCTION. In English, the interrogative who is often used instead of whom, especially in colloquial usage.1 It is often naively assumed that nominative Case is morphologically realized as who and that accusative Case is realized either as who or as whom (e.g. Haegeman 1991, section 4.3). On this view, one would further expect that whom is in free alternation with accusative who. Indeed, this seems prima facie true:

(1) a. Whom do you love t?

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1 In this article, I address my attention only to accusative who, i.e. who originating in a position assigned accusative Case, ignoring nominative who.

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a'. Who do you love t?
b. Whom do you think (that) John loves t?
b'. Who do you think (that) John loves t?

(2) a. Whom/Who do you prefer t to win?
b. Whom/Who do you believe t to be the best man?
c. Whom/Who do you think (that) he would prefer t to win?
d. Whom/Who do you think (that) he believed t to be the best man?

It may come as a surprise, therefore, to discover that this alternation is in fact not totally free, as the following examples show:

(3) a. Who don't you think he would prefer very much t to win?
b. Who don't you think he believed sincerely t to be the best man?

(4) a. ?Whom don't you think he would prefer very much t to win?
b. ?Whom don't you think he believed sincerely t to be the best man?

The sentence patterns common to 3 and 4 are fine with who, but somewhat degraded when whom is employed instead. Similarly, the following patterns are more acceptable with who than whom:2

(5) a. ??Who do you wonder whether he would prefer very much t to win?
b. ??Who do you wonder whether he believed sincerely t to be the best man?

(6) a. ?*Whom do you wonder whether he would prefer very much t to win?
b. ?*Whom do you wonder whether he believed sincerely t to be the best man?

What makes 4 and 6 less acceptable than their respective counterparts?

2 The intrinsic deviancy of 5 and 6 is due to a Subjacency violation. The point here is that if the alteration between whom and accusative who were completely free with respect to accusative Case-realization, the pairs of 3 and 4 and of 5 and 6 would show the same degree of acceptability, respectively; however, this is not the case. Besides, note that the sentences in 6 are more acceptable than the ones in (i) below, where an ECP violation is involved:

(i) a. *Howt do you wonder [who(m)j [he would prefer very much t, to win ti]]
b. *Howt do you wonder [who(m)j [he believed sincerely t, to be the best man t]]

This means that the degradation of 6 is not due to an ECP violation.
In what follows we will observe with the aid of Rizzi’s 1990 framework that this asymmetry results from the difference between who and whom in terms of Case-realization.

In section 2, we will briefly review Rizzi’s 1990 framework, which is expected to give an elegant explanation for the type of asymmetry displayed above as well as another well-known asymmetry noticed by Pesetsky 1984. In section 3, after developing a new theory of Case under which Case-realization is clearly distinguished from Case-assignment, we will see how the asymmetry in 3–6 is subsumed under Rizzi’s account of Pesetsky’s asymmetry. Supporting evidence for our analysis will be provided in section 4 and some concluding remarks will appear in section 5.

2. PESETSKY’S SURPRISING ASYMMETRY AND RIZZI’S SOLUTION. We readily recognize that all sentences in 3–6 involve weak island constructions, i.e. Wh-islands in 5 and 6, and Inner-islands induced by the negative element not in 3 and 4, which were first noted by Ross 1983. The fact that the extraction of an argument from within an island yields a delicate acceptability difference is immediately reminiscent of SURPRISING SUBJECT/OBJECT ASYMMETRIES, which were first noted by Pesetsky 1984. This phenomenon is illustrated in 7:

(7) a. ??Who do you wonder [whether [we believe [CP [IP we can help t]]]]
   b. *Who do you wonder [whether [we believe [CP t’ C0’ [IP t can help us]]]]
   c. *How do you wonder [whether [we believe [we can help Bill t]]]

Rizzi 1990 elegantly solves the puzzle of Pesetsky’s surprising subject/object asymmetry. He states (Rizzi 1990: 95–98) that the surprising asymmetry between 7a and 7b cannot be due to the ECP. Note that 7a and even 7b are not so bad as 7c, where an ECP violation is involved, and the intrinsic deviancy of 7a, b is due to a Subjacency violation. Rizzi concludes that the surprising asymmetry should be attributed to the fact that 7b fails to meet a natural optimality condition on LF. Rizzi’s claim may be summarized as follows.

The ECP Rizzi 1990 adopts requires that a nonpronominal empty category be properly head-governed. The original traces of wh-phrases in 7a, c are properly head-governed under Rizzi’s assumption, and thus they satisfy the formal licensing requirement of the ECP. As for the original trace in 7b, under Rizzi’s framework, it cannot be properly head-gov-
erned, unless *who* has an intermediate trace that resides in the CP-Spec position and agrees with *C*<sup>0</sup>, turning *C*<sup>0</sup> into a proper head-governor. In consequence, the intermediate trace in the CP-Spec position must exist in 7b. In addition to the formal licensing requirement, *wh*-trace, being a variable, must be identified as a member of the chain of its antecedent. In Rizzi's 1990 framework, A-dependency can be expressed through two devices, binding and antecedent-government. It is noteworthy that binding relations are restricted to elements associated with referential theta-roles. (See Rizzi 1990: 83-95 for detailed discussion on referential theta-roles and binding.) Given this, the A-dependency of the trace of *how* in 7c cannot be expressed through binding because it has no referential theta-role. The antecedent-government of this trace by *how* is, however, blocked by the Minimality barrier induced by *whether*. Accordingly, the relation between *how* and its trace in 7c is not properly established, resulting in ill-formedness.

On the other hand, the original traces in 7a,b have referential theta-roles, and, thus, their A-dependency can be expressed through binding. In 7a, b, the binding-relations between these traces and the *wh*-phrases are properly established. Note that the intervention of a weak island has no effect on binding-relations (see Cinque 1990). As a result, the original traces in 7a, b are properly identified as variables. It follows that 7a, b are perfect with respect to the ECP. Now that we know that the intrinsic deviancy of 7a, b is due to Subjacency and not to the ECP, what makes 7b less acceptable than 7a?

Rizzi observes that the essential structure involved in the asymmetry between 7a and 7b may be illustrated by the paradigm that follows:

\[
\begin{align*}
(8) \quad &a. \quad \text{Op} \ldots [\ldots \text{t} \ldots \text{vbl} \ldots] \\
&b. \quad \text{Op} \ldots [\ldots \text{vbl} \ldots]
\end{align*}
\]

(*vbl* stands for a variable.)

In 8, the brackets designate an island. All other things being equal, 8a is more degraded than 8b. Rizzi claims that the obligatory existence of an intermediate trace within an island reduces grammaticality to some extent. When an intermediate trace exists within an island, it cannot be identified as a variable, as an operator, or as an intermediate link of a chain connecting a variable and an operator, because it does not have a referential theta-role. Furthermore, it cannot be antecedent-governed, owing to an intervening island, and therefore no chain connection can be established. Note, however, that Rizzi (1990: 98) states that if a binding connection between a variable and its operator is properly established,
such an illegitimate intermediate trace never makes the sentence as bad as sentences involving an ECP violation. Rather, Rizzi maintains that the existence of such an intermediate trace at LF is illegitimate in terms of Chomsky's 1989 \textit{least-effort} guidelines for the \( \mathcal{A} \) system.

As mentioned above, whereas in 7a no intermediate trace is needed, in 7b the intermediate trace \( t' \) in the CP-Spec position is necessary in order that \( C^0 \) may properly head-govern the original trace \( t \). Hence, 7a and 7b correspond to 8b and 8a, respectively, resulting in their asymmetry in grammaticality. This is Rizzi's 1990 account of Pesetsky's surprising asymmetry.

Seemingly, Rizzi's analysis cannot be directly extended to the contrast in 3–6, since no intermediate trace is necessary in 4 and 6 with respect to Rizzi's ECP. However, this means that if we can find evidence that \textit{whom} has an obligatory intermediate trace in 4 and 6 for some other reason, the contrast in 3–6 can be subsumed under Rizzi's explanation of Pesetsky's surprising asymmetry.

3. \textbf{REALIZATION OF ACCUSATIVE CASE.} Let us turn to the matter of the (morphological) realization of (abstract) Case concerning the \textit{who/whom} distinction. Note that all original traces of wh-phrases in 3–6 are located in a position where accusative Case-marking is blocked, as 9 shows:

\begin{align*}
(9) & \quad \text{a. } *\text{She would prefer very much him to win.} \\
& \quad \text{b. } *\text{She believed sincerely him to be the best man.}
\end{align*}

Now let us make an assumption with respect to the distinction between accusative \textit{who} and \textit{whom}. Since \textit{whom} has an overt declension form of accusative Case, let us assume that the chain of \textit{whom} must be Case-marked by some means in order to materialize the overt morphological realization of its accusative Case. In contrast, accusative \textit{who} shows no declension of accusative Case. Then let us assume that the chain of accusative \textit{who}, unlike that of \textit{whom}, need not be Case-marked.

Given the above assumption, a problem arises: How and where is \textit{whom} in 4 and 6 Case-marked? As shown in 9, the original position of \textit{whom} in 4 and 6 is a position where Case-marking is blocked. This problem, however, disappears soon if we clarify the relation between Case-marking and morphological realization of (structural) Case.\footnote{Observing sentences such as the following, Epstein 1991 also claims that wh-trace need not be Case-marked:}
3.1. Distinction between Case-assignment/realization. Conceptually, it has been assumed since Chomsky 1981 that Case-marking should be divided into Case-assignment and Case-realization. As far as syntactic operation is concerned, it is widely considered that Case-marking means both Case-assignment and Case-realization. Then, if V Case-marks its object NP, as is commonly assumed, it means that V both assigns and realizes accusative Case. If this were the case, it would not be necessary to differentiate Case-realization from Case-assignment in syntactic operation, at least with respect to accusative Case.

In order to maintain the assumption that, while whom needs to have its accusative Case realized to manifest its overt accusative declension, who need not be Case-marked, we must clearly divide Case-marking into Case-assignment and Case-realization, even in syntactic operation. We thus discard the common assumption that V Case-marks (i.e. both assigns and realizes the accusative Case of) its object NP. In what follows, we will offer discussions differentiating accusative Case-realization from accusative Case-assignment.

As for accusative Case-assigners, we follow Belletti & Rizzi’s (1988: 332) idea, which is cited below:

(10) V is a structural (accusative) Case assigner iff it has an external argument.

As for the mechanism concerning the technical treatment of Case-assignment/realization, we follow Kayne’s (1983, Ch. 10) suggestion: Case-assignment is accomplished by the transmission of a Case Feature K from a Case-assigner A to a Case-assignee B. Given a chain C with the Case Feature K, K can be morphologically realized on at most one member of element of C. (Note that, according to this mechanism, Case-assignment always precedes Case-realization.)

Now, in the following subsections, we will discuss the realization of

(i) a. Who would you prefer very much t to win?
   b. Who did you believe sincerely t to be the best man?

Some problems arise from this assumption, however. Epstein solves them by assuming that a variable must be governed by a Case assigner (see also Pollock 1981). Possibly, they will be also avoided if we make a clear distinction between Case-assignment and realization. See the discussion in footnote 8 below.

4 In fact, some recent works such as Belletti 1988, Chomsky 1986a, and Shlonsky 1987 state that structural Case-realization is executed at S-structure, independently of Case-assignment. It is, however, unclear why this should be so. The argument to be made below in the text will explicate the reason.
accusative Case. Furthermore, given these assumptions with respect to Case, we will see that the asymmetry found in 3–6 is indeed subsumed under Rizzi’s 1990 explanation of Pesetsky’s surprising asymmetry.

3.2. ACCUSATIVE CASE-REALIZATION BY AGR-O. In the preceding subsection, we maintained that Case-realization should be distinguished from Case-assignment in syntactic operation and that V assigns accusative Case. It follows that V need not realize accusative Case. Then, what element realizes accusative Case? As hinted above, Case-realization is closely connected to overt morphological declension of NPs. In fact, Marantz (1984: 72) states that Case-realization is a syntactic operation essentially identical with agreement and that the only difference between these two syntactic operations is that while the operator bears morphology in the case of agreement, the operand bears morphology in the case of Case-realization. Following Marantz 1984, we thus conclude that the same element governs both agreement and Case-realization (see also Lapointe 1980 and Lefebvre 1988).

In GB syntax, it is assumed that agreement is mediated by AGR, a functional category, which has its own projection (see Pollock 1989 and Chomsky 1989). Now, if Case-realization and agreement are governed by the same element, we may conclude that Case-realization is mediated by AGR. Extending Pollock’s 1989 analysis of IP-internal structure, Chomsky (1989: 58) first introduced AGR-S and AGR-O and proposed the following clause structure:

\[
\text{(11)}\quad \begin{array}{c}
\text{IP} \\
\text{NP}_{\text{(Subj.)}} \\
\text{AGR-S} \\
\text{FP} \\
\text{F} \\
\text{AGR} \\
\text{AGR-O} \\
\text{VP} \\
\text{V} \\
\end{array}
\]

Following Kayne 1989, Chomsky further assumes that AGR-O governs

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5 Noam Chomsky reported to me in a personal communication that he too is developing further the proposal concerning the AGR element in Chomsky 1989 along the idea that agreement and structural Case are expressions between NP and the AGR element, a collection of phi-features. (See, for example, Mahajan 1990 for an analysis along this line of idea.)
object agreement. We may, thus, regard AGR-O as the realizer of objective (i.e. accusative) Case.

With regard to the analysis of the realization of the accusative Case of an object NP in an ordinary transitive construction under the above hypothesis that AGR-O realizes accusative Case, consider the following D-structure configuration:

(12) ... [AGRP AGR-O [VP V NP]] ...

In 12, where V is a transitive verb, V assigns accusative Case to the following object NP. But, in this configuration, AGR-O cannot govern the object NP from its original position because of the Minimality barrier induced by V; accordingly, Case-realization of the object NP is not executed at D-structure. According to Pollock 1989 and Chomsky 1989, in French V moves up onto AGR-O, deriving the following S-structure configuration:

(13) ... [AGRP [AGR-Oi AGR-O Vi] [VP ti NP]] ...

In 13, AGR-O can govern the NP, and, as a result, it realizes the accusative Case of the NP following the trace of V, thanks to the Government Transparency Corollary. (See Baker (1988: 64) for the definition.) In English, V, on the other hand, cannot move up onto AGR-O because of the opaque characteristic of English AGR-O (see Pollock 1989 and Chomsky 1989). Thus, AGR-O in English instead moves down onto V, resulting in the following S-structure configuration:

(14) ... [AGRP ti [VP [V* V AGR-Oi] NP]] ...

Since the movement of AGR-O onto V is an adjunction, V* in 14 does not dominate AGR-O. Hence, in 14 AGR-O governs the NP that follows, realizing the accusative Case of the NP. In ordinary transitive constructions, AGR-O realizes the accusative Case of the object NP through this mechanism.

3.3. The Case Filter. It is generally assumed that the adjacency condition on Case-marking requires that Case-assigner and assignee be adjacent (see Stowell 1981). This condition causes 9 to violate the Case Filter. Contrary to this general assumption, in order to maintain the differentiation between Case-assignment and realization in syntax, let us

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6 On the same analogy, we may also regard AGR-S as the realizer of nominative Case. See Ura 1991 for more detailed discussion on nominative Case assignment/realization.
interpret the adjacency condition on Case-marking to refer to Case-realization, but not to Case-assignment. Accordingly, the Case Filter must be defined as follows:

(15) The Case Filter (applied at S-structure)

Every overt NP in an A-position must have a realized Case. Remember that, since Case-realization always follows Case-assignment, an overt NP must be assigned Case at S-structure to satisfy the Case Filter in 15; accordingly, the existing Case Filter, which requires every overt NP to be assigned a Case at S-structure, is subsumed under the Case Filter in 15. Given this, the accusative Case of him in 9, which is assigned by matrix V, is not realized by AGR-O even at S-structure because of the intervention of an adverbial. It results in a violation of the Case Filter in 15; for, even if AGR-O moves down amalgamating with V, an adverbial still intervenes between AGR-O and him in 9.°

3.4. CASE-REALIZATION AT AN INTERMEDIATE TRACE. Returning to the matter of the realization of the accusative Case of whom in 4 and 6, we conclude from the above discussion that it is not realized at the original position of whom.°° The following question arises again: Where is the accusative Case of whom in 4 and 6 realized?

7 The sentences in (i) below are also ruled out by 15:

(i) a. *It seems John to have kissed Mary.
   b. *It is certain John to win.

John in (i) is not assigned Case because seem and certain do not have the ability to assign accusative Case. (Remember the stipulation in 10.) Since Case-realization always follows Case-assignment, John in (i) violates the Case Filter in 15 in the long run.

8 To explain the ill-formedness of the sentences in (i) below, Rouveret & Vergnaud 1980, Chomsky 1981, Lasnik & Freidin 1981, Borer 1983, Safir 1985, and many others claim that wh-trace must be Case-marked:

(i) a. *Who does it seem t to have kissed Mary?
   b. *Who was it believed t to have kissed Mary?
   c. *Who is it certain t to win?

If we admit this restriction on wh-trace, the sentences in 4 and 6 as well as the ones in (ii) below (= (i) in footnote 3 above) turn problematic.

(ii) a. Who would you prefer very much t to win?
   b. Who did you believe sincerely t to be the best man?

If, in order to explain the well-formedness of the sentences in (ii), we may assume, as Epstein 1991 does, that wh-trace need not be Case-marked, we lose the explanation for (i).

To break up this dilemma and make a satisfactory explanation of other problems involved in the existing Case Theory, Ura 1991 proposes the following condition on Case, which differs from the Case Filter in 15 in the levels of representation at which
Kayne 1989 provides a clue to the solution of this question. He convincingly argues that French past participle agreement takes place between AGR-O and an intermediate trace of the agreement-inducing NP. As 16 shows, the agreement between the past participle and the following NP never takes place unless the agreement-inducing NP is moved up by A-movement through some position AGR-O governs:

(16) a. *Paul a repeintes les chaises
   'Paul has repainted the chairs'
   (cf. Paul a repeint les chaises.)

b. les chaises que Paul a [t' AGR-O [repeintes t]]
   'the chairs which Paul has repainted'

In the spirit of Kayne's approach, let us assume that the realization of the accusative Case of whom in 4 and 6 is executed at an intermediate trace of whom by AGR-O under government, just as in the case of French past participle agreement. Now we may postulate a more articulated structure for 4 and 6 as follows:

they apply. (A similar condition is proposed by Shlonsky 1987.)

(iii) Condition on Case (applied at LF)

The head of an A-chain must be in a position where structural Case is assigned (or be PRO).

This condition requires that wh-trace be assigned Case, but it does not require that wh-trace have its Case realized. This is so because the original trace of a wh-phrase is the head of an A-chain. (Note that this is consistent with the assumption in the text that the chain of who need not be Case-marked, because Case-marking is accomplished only if Case-realization is executed.) Given this, we can simultaneously explain the well-formedness of (ii) and the ill-formedness of (i) in the following manner: If the adjacency requirement is not relevant to Case-assignment, as assumed in subsection 3.3, the wh-traces in (ii) are, as required, assigned accusative Case by the verbs, satisfying the Condition on Case in (iii). In addition, the wh-traces in (ii) vacuously satisfy the Case Filter in 15 because they are not overt NPs. It follows that (ii) are well-formed.

On the other hand, in (ia) seem does not have an external argument; consequently, it cannot assign accusative Case to the following wh-trace, resulting in the violation of the Condition on Case in (iii). In (ib), according to Baker, Johnson, & Roberts 1989, Jaeggli 1986, and Roberts 1986, the passive morpheme -en, attaching to believe, absorbs the accusative Case which is to be assigned to the following wh-trace, resulting in ill-formedness. In (ic), the wh-trace is never assigned accusative Case, because certain, being an adjective, does not assign structural Case to its arguments. Again it results in the violation of the Condition on Case in (iii).

9 In 17, t' is adjoined to the maximal projection of AGR-O. Indeed, in the framework of Chomsky 1986b, t' is governed by AGR-O when it is adjoined to AGRP. But, in the framework of Rizzi 1990, t' is not governed at that position; rather, we need to postulate that it is adjoined to VP in order that it may be governed by AGR-O, if we follow Rizzi 1990. Note that the argument made in the text is not affected at all by the issue of whether t' is adjoined to AGRP or to VP.
(17) a. ?Whom don’t you think \([CP [IP he [\text{would} [\text{prefer very much to win}]])\] \(= 4a\)
b. ?Whom don’t you think \([CP [IP he [\text{believed sincerely} [\text{to be the best man}]])\] \(= 4b\)
c. *?Whom do you wonder \([CP [IP he [\text{would} [\text{prefer very much to win}]])\] \(= 6a\)
d. *?Whom do you wonder \([CP [IP he [\text{believed sincerely} [\text{to be the best man}]])\] \(= 6b\)

In 17, the accusative Case of the chain of whom is realized at the intermediate trace \(t'\) by AGR-O under government. Furthermore, this intermediate trace is within an island. On the other hand, 3 and 5, where who is involved, do not need any intermediate trace under Rizzi’s 1990 framework, thanks to the stipulation that the chain of who, unlike that of whom, need not have its accusative Case realized. Note that all original traces of wh-phrases in 3–6 are in positions where referential theta-roles

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10 Kayne (1983, Ch. 1) reports that there are some English speakers who accept the following examples:

(i) a. the man whom I believe \([CP [IP t \text{has left}]])\)
   b. the man whom I think \([CP [IP t \text{is quite intelligent}]])\)

Kayne claims that the accusative Case-marking of whom in (i) takes place at the embedded CP-Spec position which is governed by the matrix verb. Then, one might claim that even in 17 the accusative Case of whom comes from the embedded CP-Spec position, just as in (i).

However, I note the fact that the number of the speakers who accept such sentences as in (i) is far from large; moreover, those who do not accept the sentences in (i) do accept the sentences in 17 and (ii) below:

(ii) a. the man whom you think \([CP [IP he [\text{would prefer very much} [\text{to win}]])]\)
   b. the man whom I think \([CP [IP \text{Bill believed sincerely} [\text{to be the best man}]])]\)

It is possible to say that those who do not accept (i) do not permit Case-marking at an embedded CP-Spec position. The fact that even such speakers accept 17 and (ii) indicates that Case-marking does not take place at an embedded CP-Spec position in 17 and (ii). Furthermore, with only Kayne’s Case assignment mechanism, we cannot explain where the accusative Case of whom in the following sentences comes from, because in these sentences there is no CP-Spec position that is able to be Case-marked:

(iii) a. Whom would you prefer very much to win?
   b. Whom did you believe sincerely to be the best man?

(iv) *Whom do you wonder how to prefer very much to win? (cf. **How do you wonder whom to prefer very much to win?)

In (iv) whom cannot land at the embedded CP-Spec position, because how occupies that position. (Note that (iv) is better than a sentence involving an ECP violation.)
are assigned, and, thus, the operator-variable relation is properly established in all sentences in 3–6. Therefore, 3 and 5 correspond to 8b, and 17 (=4 and 6) corresponds to 8a, resulting in their asymmetry in grammaticality.\(^\text{11}\)

We, therefore, can predict that, when no adverbial intervenes between the embedded verb and the original trace of \textit{whom} in 4 and 6, the sentences show a somewhat higher degree of acceptability than the sentences in which \textit{whom} originates in a position where Case-realization by AGR-O is blocked. This prediction is borne out by the following examples. Compare 18 with 4 and 19 with 6:\(^\text{12}\)

\begin{itemize}
\item[(18)]
\begin{itemize}
\item a. Whom don’t you think he would (very much) prefer t to win?
\item (cf. ?Whom don’t you think he would prefer very much t to win? (= 4a))
\end{itemize}
\begin{itemize}
\item b. Whom don’t you think he (sincerely) believed t to be the best man?
\item (cf. ?Whom don’t you think he believed sincerely t to be the best man? (= 4b))
\end{itemize}
\end{itemize}

\begin{itemize}
\item[(19)]
\begin{itemize}
\item a. ??Whom do you wonder whether he would (very much) prefer t to win?
\item (cf. ?*Whom do you wonder whether he would prefer very much t to win? (= 6a))
\end{itemize}
\begin{itemize}
\item b. ??Whom do you wonder whether he (sincerely) believed t to be the best man?
\item (cf. ?*Whom do you wonder whether he believed sincerely t to be the best man? (= 6b))
\end{itemize}
\end{itemize}

In 18 and 19, the accusative Case which is assigned to the original trace of \textit{whom} by \textit{V} is properly realized at the original position of the trace by

\(^{11}\) An \textit{EL} reviewer pointed out the following examples as a problem to the stipulation that accusative \textit{who} need not have its Case realized:

\begin{itemize}
\item[(i)]
\begin{itemize}
\item a. *Who loves sincerely who?
\item b. *Who prefer very much who to win?
\end{itemize}
\end{itemize}

If the adjacency condition on Case-marking is not relevant to Case-assignment, as we assumed, \textit{who} in (i) is assigned accusative Case as required. This leads us to predict, contrary to the fact, that the sentences in (i) are well-formed. However, one should notice that \textit{who} in (i) occupies an A-position and \textit{who} itself is an overt NP. Overt NPs in A-position which do not have any realized Case are precluded by the Case Filter in 15.

\(^{12}\) Again, the intrinsic deviancy of 19 is due to a Subjacency violation.
AGR-O under government from within the amalgam formed by its merging with V. Note that this realization, unlike the cases in 4 and 6, is not impeded by the intervention of an adverbial. Thus no intermediate traces are needed under Rizzi's 1990 framework. As far as Case-realization is concerned, it is possible that the accusative Case of the chain of whom in 18 and 19 is realized at some adjunct position that AGR-O governs before AGR-O moves down amalgamating with V. If this derivation were allowed, 18 and 19 would show the same degree of acceptability as do 4 and 6, respectively. It is, however, not allowed for the sake of economy of derivation and representation (see Chomsky 1989).

On the other hand, because of the intervention of an adverbial between V and its original trace, the accusative Case of the chain of whom in 4 and 6 is never realized at the original position of whom. It is realized when whom is adjoined to the position AGR-O governs before AGR-O moves down amalgamating with V, as discussed above. Again, the difference as to whether an intermediate trace obligatorily exists or not results in the subtle but consistent asymmetry in acceptability between 18 and 4 and between 19 and 6.

3.5. Examination. Thus far, we have observed that the surprising asymmetry between 3 and 4 and between 5 and 6 emerges when the original trace of who or whom occupies a position where Case-realization is blocked within a weak island such as an Inner-island or a Wh-island (see Cinque 1990). If this is true, we predict that the asymmetry in grammaticality in terms of who/whom never emerges in cases where the original trace of who or whom occupies a position at which Case is realized, or where the original trace of who or whom is not within a weak island. This prediction is borne out by the following examples:

(20) a. Who/Whom don't you think he would prefer t to win?
   b. Who/Whom don't you think he believed t to be the best man?
   c. ??Who/Whom do you wonder whether he would prefer t to win?
   d. ??Who/Whom do you wonder whether he believed t to be the best man?

(21) a. Who/Whom do you think he would prefer very much t to win?
   b. Who/Whom do you think he believed sincerely t to be the best man?
In 20, even though the original traces of who or whom are within a weak island, the accusative Case of who or whom can be properly realized at their original trace position. Thus, the constructions of the sentences involving whom in 20 do not correspond to 8a. In 21, even though the realization of the accusative Case of whom is blocked by the intervening adverbs, no island is involved in these sentences. Again, the constructions of the sentences in 21 do not correspond to 8a. Therefore, such an asymmetry as between 3 and 4 or between 5 and 6 does not emerge in 20 and 21.

This points both to the adequacy of our assumption about the distinction between who and whom in terms of Case-realization and to the adequacy of our hypothesis that the asymmetry between 3 and 4 and between 5 and 6 should be subsumed under Rizzi's 1990 account of Pesetsky's 1984 asymmetry.

4. MORE DATA. In the preceding section, we observed that when whom cannot have its Case realized at its original position, it always moves through some adjunct position which AGR-O governs on the way to its last landing site in order to have its accusative Case realized by AGR-O. We also observed that if such an intermediate trace occurs within a weak island, the sentence is slightly degraded.

There is another type of construction in which it is possible to extract a wh-phrase from a position where Case-marking is not accomplished. Postal (1974, Ch. 9) presents the following examples:

(22) a. *They alleged John to be a pimp.
    b. *He estimates your sister to weigh 250 pounds.

(23) a. Who did they allege t to be a pimp?
    b. Whose sister did he estimate t to weigh 250 pounds?

One might consider that allege and estimate in 22 do not assign Case to the following NPs, and that it would, in turn, result in the ill-formedness of 22. But, by the stipulation in 10, we expect that these two verbs indeed assign Case, because they have an external argument. There is empirical evidence that they indeed assign Case to the following NPs. Consider the following examples, which are drawn from Postal 1974:

(24) a. He alleged there to be gambling going on in the back room.
    (cf. *He alleged gambling to be held in the back room.)
    b. I estimate there to be two million people in that valley.
    (cf. *I estimate two million people to live in that valley.)
As shown in 25 below, expletive *there* cannot occur at a position where Case is never assigned:

(25) a. *It seems *there* to be a man in that room.
    b. *It is certain *there* to be a man in that room.
    c. (*there) to be a man in that room is not important.

From the fact that in 24 *there* occurs at the position following *allege* or *estimate*, we conclude that verbs such as *allege* or *estimate* assign Case to the following position.

Given this, what makes 22 ill-formed and what saves 23? Suppose that a verb such as *allege* or *estimate*, because of a lexical peculiarity, prevents AGR-O from realizing the Case of the following NP from within the amalgam of AGR-O and the verb. Then, whereas 22 violates the Case Filter

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13 This is deduced from the Condition on Case in footnote 8, which is repeated below:

(i) Condition on Case (applied at LF)
The head of an A-chain must be in a position where structural Case is assigned (or be PRO).

According to Shlonsky 1987, expletive *there* must be replaced with an argument at LF. Given this, any sentence in which expletive *there* occupies a non-Case position is ruled out by this condition. This is so because the argument replacing *there* is not in a non-Case position at LF, resulting in the violation of this condition. The reason that expletive *there* can occur at a position where Case is not realized is that *there* is not an NP in that it must be replaced with some argument at LF. (cf. Chomsky 1989 and Shlonsky 1987).

14 As a matter of fact, *estimate* occasionally takes an ECM construction. Postal himself provides the paradigm below (from Postal (1974: 299)):

(i) a. *I estimate Bill’s boat to be 36 feet long.
   b. I estimate the length of Bill’s boat to be 36 feet.

(ii) a. *I estimate that beam to weigh 47 tons.
   b. I estimate the weight of that beam to be 47 tons.

Moreover, Michael T. Wescoat pointed out to me in a personal communication that some of the verbs which Postal (1974: 305) lists as not taking an ECM construction can occur in such constructions under specially limited circumstances:

(iii) In this lawsuit, I am alleging a fraud to have taken place.

Pointing out these examples, one might pose a problem to the statement that the original trace positions of all wh-phrases in 23 are locations where Case is never realized. Note, however, that the existence of these examples does not annul this statement and thus it does not spoil our discussion. This is so because even if *allege* and *estimate* can sometimes take ECM constructions under particular circumstances, and, as a result, the accusative Case of the NP following them is properly realized in such cases, we cannot explain the ill-formedness of 22 and the well-formedness of 23 at once without resorting to the Case Filter in 15. Therefore, we maintain our proposal, admitting that at least in 22, *allege* and *estimate* prevent AGR-O from realizing Case because of a lexical peculiarity, when AGR-O merges with them.
in 15, 23 is exempted from the Case Filter. It follows that 22, but not 23, is ill-formed. (Note that the wh-traces in 23 satisfy the Condition on Case proposed in footnote 8.)

This construction immediately reminds us of the construction exhibiting the asymmetry found in 3–6. Thus, we predict that if whom is used instead of the wh-phrases in 23, its Case assigned by the V is realized not at its original position, because of the lexical peculiarity of the V, but at some adjunct position that AGR-O governs before it moves down amalgamating with the V. This prediction is borne out by the following examples, which show the same asymmetry found in 3–6:

\[(26)\]
\[
a. \text{Who don’t you think they alleged t to be a pimp?}
\]
\[
b. \text{Who don’t you think he estimated t to weigh 250 pounds?}
\]
\[
c. \text{?Whom don’t you think they alleged t to be a pimp?}
\]
\[
d. \text{?Whom don’t you think he estimated t to weigh 250 pounds?}
\]

\[(27)\]
\[
a. \text{??Who do you wonder whether they alleged t to be a pimp?}
\]
\[
b. \text{??Who do you wonder whether he estimated t to weigh 250 pounds?}
\]
\[
c. \text{?*Whom do you wonder whether they alleged t to be a pimp?}
\]
\[
d. \text{?*Whom do you wonder whether he estimated t to weigh 250 pounds?}
\]

In addition, as observed in section 3.5, the fact that the asymmetry does not emerge when no island is involved in these sentences points to the correctness of our analysis:

\[(28)\]
\[
a. \text{Who/Whom do you think they alleged t to be a pimp?}
\]
\[
b. \text{Who/Whom do you think he estimated t to weigh 250 pounds?}
\]

5. **Concluding Remarks.** In this article, we argued that the who/whom distinction is not simply stylistic but syntactic, exhibiting a kind of asymmetry previously noted by Pesetsky. Rizzi’s account of Pesetsky’s asymmetry directly applies to the who/whom asymmetry found in 3–6, if we make the following assumptions: (i) It is AGR-O that realizes accusative Case. (ii) The accusative Case of the Chain of whom, which has an

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15 Note that AGR-O retains the ability to realize accusative Case unless it merges with peculiar verbs such as *allege* or *estimate.*
overtly declined accusative form, must be realized in order to materialize its overt morphological realization of accusative Case. (iii) The adjacency condition on Case-marking concerns Case-realization, but not Case-assignment, and the Case Filter requires that an overt NP should have a realized Case.

Furthermore, these assumptions lead us to develop a hypothesis that Case-realization is clearly distinguished from Case-assignment in syntactic theory. A theory differentiating Case-realization from Case-assignment possibly implies a wide variety of consequences not only to syntax but also to morphology with respect to abstract Case and (grammatical) agreement. For example, it provides strong support for the existence of AGR elements in languages which have no agreement system such as Chinese or Japanese. This is because the role of the AGR element is not only to mediate agreement but also to realize abstract Case, as has been claimed in this article. Moreover, this hypothesis forces us to refine the existing Case Theory to recognize the distinction between Case-realization and Case-assignment. But I leave exploring these consequences to future research.¹⁶

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¹⁶ See Ura 1991 for an extension of this line of analysis to Case Theory, and Ura (in preparation) for an application to the theory of agreement.
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