Skeptical Linguistic Essays

Chapter 7 Junk Syntax 1: A Supposed Account of Strong Crossover Efffects

Section 1. Background

The *strong crossover phenomenon*, apparently first treated in Postal (1971), designates binding failures like those in (1): [1, 2]

(1)a. ⊄Who$_1$ did Frank convince her$_1$ that you would hire t_1?

b. ⊄the principle$_1$ which$_1$ I inferred from it$_1$ that no other principle entailed t_1

c. ⊄What$_1$ Jane compared it$_1$ to a model of t_1 was the Eiffel Tower.

d. ⊄[Generalissimo Garcia]$_1$, no one could persuade him$_1$ that you were related to t_1.

e. ⊄It doesn't matter [who]$_1$ they claim she$_1$ believes you should invite t_1.

Following Wasow (1972, 1979), I refer to the asymmetric relation between antecedent and pronominal form, reflexive or not, as *anaphoric linkage*. Binding is thus a subtype of this. First noticed in 1968, examples like (1) manifested previously unknown restrictions on anaphoric linkages between *extracted* elements and pronouns. My original research subsumed these facts under the rubric 'crossover phenomena', a term taken to cover considerably more data, much of which subsequent work indicates are distinct from (1). Specifically, Postal (1971) failed to distinguish what Wasow (1972) I think properly differentiated as *strong* versus *weak* crossover binding violations, the former represented by (1), the latter by, for example, (2).

(2)a. ⊄Who$_1$ did all of his$_1$ associates detest t_1?

b. ⊄the proposal which$_1$ your rejection of it$_1$ led me to abandon t_1

c. ⊄[Whatever starlet]$_1$ they convinced her$_1$ employer that you had interviewed t_1,...

A major distinction is their different ranges of applicability. Some extractions induce no weak effects but do induce strong ones, e.g. English topicalizations of *definite referential NPs*; see (3).

(3)a. Strong Crossover Case: ⊄Jenny$_1$, I am sure she$_1$ thinks you really dislike t_1.

b. Weak Crossover Case: ⊂Jenny$_1$, I am sure her$_1$ husband thinks you really dislike t_1.

This English-internal difference correlates with the cross-linguistic fact that there do not even seem to be purported counterexamples to the strong effect; in contrast, *weak* effect variation exists even between French and English; see Postal (1993c).

The present study, which is restricted to strong violations, has two aspects. First, it is an extended rejection of the validity of the assertion in (4) that strong effects reduce to one of the elements of Chomsky's binding theory.

(4) Chomsky (1981: 193)

"Principle (C) gives the basic facts of strong crossover in the sense of Wasow 1972, 1979)..."

Referencing a notion of *binding* based on coindexing and c-command, Chomsky's Principle C requires so-called *R(eferring)-Expressions* to be unbound. [3] Second, intertwined with the argument for the inadequacy of a reduction of strong effects to Principle C is an argument that the standards utilized in the work supposedly supporting claim (4) are so low as to qualify as junk syntax.

Although Chomsky (1982a) transitorily abandoned the Principle C view of strong violations, it appears today to be a standard and rarely challenged received wisdom about strong effects. Occasional alternatives like the NP Structure proposals of Riemsdyk and Williams (1981, 1986), the proposal by Higginbotham (1980a), or that of Koopman and Sportiche (1982/3) have few current echoes. Some sense of the scope of support for (4) is seen in (5).

(5)a. McCloskey (1990: 212)

"Sentence (34b) is ungrammatical because the lexical NP *John* is c-commanded by, and coindexed with, the epithet *the bastard*. Sentence (34c) is ungrammatical because the embedded subject trace is A-bound by the epithet *the bastard*, giving rise to a Condition C (strong crossover) violation."

b. Georgopoulos (1991: 37)

"Strong crossover (SCO) is an effect of principle C of the binding theory or an equivalent c-command condition, which prevents a variable or an r-expression from having an antecedent in a c-commanding A-position"

c. Ristad (1993: 85)

"Recall that strong crossover is the configuration where an anaphoric element c-commands the trace of a displaced wh-phrase and intervenes between the wh-phrase and its trace as well."

d. Other Works Invoking a Principle C Account of the Strong Crossover Effect

Lasnik and Uriagereka (1988: 41; notably though, this work, pages 137-8, expresses strong doubts about the Principle C account based on observations of Higginbotham); Cinque (1990: 150); Roberts (1991: 17); Haegeman (1991: 380); Cowper (1992: 170); Napoli (1993: 487); Ouhalla (1994: 214-215); Fiengo and May

(1994: 279-280); Harbert (1995: 182); Hornstein (1995: 21); Huang (1995: 139); Müller (1995: 163); Culicover (1997: 316, 325, 326); Roberts (1997: 147); Kennedy (1997: 702), Sells and Wasow (1999: 21), Fox (2000: 132 note 21).

Despite this broad acceptance, I argue that no Principle C account of the strong effect has ever been viable. The discussion is limited to English, which imposes no serious implications since at issue is the correctness of a claimed *universal* account. Therefore, a showing that it fails for English is entirely sufficient.

The attempt to reduce the strong effect to Principle C violations is inevitably linked to independent proposals. These include notably those of (6):

(6) Key Assumptions Linked to a Principle C View of the Strong Effect

a. The assumed 'gaps' in the relevant sentences, that is, cases of putative movement to so-called 'non-argument positions', are taken to be filled by objects called *traces*. Like all traces, these are bound by the assumed extractees in the relevant constructions.

b. The postulated traces must be characterized as R-expressions, because that is the (only) category that Principle C restricts.

Assumptions (6a, b) each involve potential weaknesses, some of which, I claim, are genuine flaws. Even granting (6a, b) however, the specific factual requirement in (7) must be met.

(7) Each gap inducing a strong violation, a gap taken to be a trace under assumption (6a), must be c-commanded by the pronoun whose link to the gap position yields the violation.

Assumption (7) holds since the concept 'binding' Principle C appeals to is only instantiated by pairs of constituents in a c-command relation. The link to c-command also creates a potential weakness argued to be irreparable.

The trace-based Principle C view of the strong effect grew out of Chomsky's own earlier trace-theoretic description of the effect, in turn a development of the account in Wasow (1972), whose key idea was attributed to Peter Culicover. See (8) and (9).

(8) Wasow's (1972/1979: 160) number (10).

a. $<_{S1}$ He said $<_{S2}$ Mary kissed someone $_{S2}> _{S1}>$

b. $<_{S1}$ Who did he say $<_{S2}$ Mary kissed $\Delta_{S2}>_{S1}>$

c. Wasow (1972/1979: 160): "The transformation of WH-fronting converts a structure like (10a) into one like (10b). Now, if who and he in (10b) are to be allowed to enter into an anaphoric relation, the Transitivity Condition requires that Δ and he also be anaphorically related. Consequently, the resultant sentence will be ungrammatical for the same reason that (11) is."

d. Wasow's (11) was my *(10b).

(9) Chomsky (1976/1977: 195)

a. "Thus we can account for the full range of interpretations in (74) by appeal to independently motivated principles of anaphora, again on the assumption (72) that surface structure determines LF with the natural additional assumption that bound variables function (to first approximation) as names."

b. "nor need we invoke any principle beyond established principles of anaphora that apply in (77)-(79)."

Space precludes discussion of these earlier approaches; but a crucial idea in all of them, as in the Principle C view, is that strong effects reduce to the anaphoric linkage restriction in *non-extraction* examples like (10).

(10)a. $\not\subset$She$_1$ convinced me that I should help Isabelle$_1$.

b. $\not\subset$He$_1$ said Mary kissed someone$_1$.

Such a reduction played no role in the account of Postal (1971), and is argued here to be incorrect.

The traces invoked in the original Principle C proposal were so-called *empty categories*. More recently, its formulator has adopted the different account in (11), the so-called *copy theory of traces.*

(11) Chomsky (1995a: 202)

"the trace left behind is a copy of the moved element, deleted by a principle of the PF component in the case of overt movement. But at LF the copy remains, providing the materials for 'reconstruction'."

The two alternative views of traces yield two variants of the claim that strong effects follow from Principle C; these have different factual consequences and hence potentially distinct truth values. I argue that *neither* is tenable, beginning with the initial, empty category proposal.

Section 2 Older Objections to Principle C Accounts

2.0 Remarks

Despite its current theoretical dominance, at least four defects of the empty category version of the Principle C approach *already* appear in the literature.

2.1 Defect 1: Stipulation of 'R-expression' Status

Principle C can at best yield the strong effect only via the claim that the traces left by movements to non-argument positions *are* R-expressions. Unless this categorization follows from something, the degree of explanatory success achieved even if the strong effect could reduce in this way to Principle C would be less than claimed. Even sympathizers with Chomsky's approach recognize this defect. Thus Higginbotham (1983: 407) calls taking variables as R-expressions "rather unnatural", before giving cases where it does not work correctly (under a principle C approach). Koster (1987: 68-69) calls the assignment an "unnecessary stipulation". And Lasnik and Uriagereka (1988: 42) defend the stipulation only by the faint praise that if all NPs have to be assigned to some category, "R-expression seems a not unreasonable candidate."

But the requirement does not follow since even if it is claimed that all movements leave traces, not all can be claimed to leave *R-expression* traces. This is impossible for so-called head movements and, of course, for movements to *argument* positions, whose traces must be anaphors. Very different consequences would obtain if movements to argument positions left R-expression traces and those to non-argument positions anaphors, or both left anaphors, or both R-expressions. So the actual choice from the four logical possibilities remains unprincipled. Moreover, Meyers (1994: 285) observes that subsuming only those traces linked to movement to non-argument positions and ordinary lexical NPs under a blanket category R-expression is independently suspicious. For the former require antecedents, like the traces of movement to argument positions, but the latter do not. So the needed grouping links elements which contrast in required antecedence and fails to include others which do require antecedence. The original Principle C treatment then requires a dubious *stipulation* like (12).

(12) Traces of movement to non-argument positions are R-expressions.

2.2 Defect 2 Non-NP Extractions

A second problem for the original Principle C account also relates to dependence on (12). For this is too general, since 'R-expression' is only a category of NPs, while non-NPs are also taken to move to non-argument positions. Chomsky's binding theory including Principle C is exclusively an account of certain NP properties. Incidentally, the recent invocation of DPs instead of NPs has no relevant consequences here and will here be ignored. Hence (12) has to be replaced, by something like (13).

(13) (Only) traces of movement *of NPs* to non-argument positions are R-expressions.

Therefore, a claim that the strong effect reduces to Principle C entails that such effects are never induced by *non*-NP extraction; specifically, not by Prepositional Phrase (PP) extraction. This follows since Chomskyan traces of moved PPs must be PPs, hence not 'R-expressions'. If the trace of a moved PP were an NP, a violation of Chomsky's (1981) projection principle would ensue. As Lasnik and Uriagereka (1988: 41) put

it: "In accord with Trace Theory, let us assume that who leaves a trace when it moves. This trace is obviously an NP, a fact ensured by Trace Theory, which essentially says that, upon movement, an item leaves behind a syntactic silent copy of itself."

But the entailment is wrong. For as Koster (1987: 82) indicates: "If a PP containing a Wh-word is preposed, we have a really crucial example:

(132) *[With whom$_i$] did he$_i$ say that Mary talked [$_{PP}$ t]

This is a normal case of strong crossover. It is not possible to construct a reading in which there is a binding relation between he and (the variable corresponding to) *whom*. In this case, the example is not ruled out by the binding theory, because the binding theory says nothing about PP-traces." [4]

While I will not in general quarrel with Principle C itself, it has known inadequacies and a possibly not so well-known one. Namely, since Chomsky's binding theory is not only restricted to argument positions but to NPs, an evident difficulty is that the bad CP anaphora case in (14a) is unblocked although the no more impossible gerundive NP version is properly blocked:

(14) ⊄It$_1$suggests that Mike thought a. [that 2 and 2 is 4]$_1$/b. about [2 and 2 being 4]$_1$.

Example (14a) satisfies Principle C since the that clause, a CP, is thereby not an R-expression. The lack of induced binding failure in (14a) leads to a further non-NP related crossover problem linked to examples like (15a):

(15)a. ⊄[That Ted is a spy]$_1$, I now realize that it$_1$ indicates that Bob knew t$_1$.

b. *Ted adores/condoned/criticized/studied/ that Marsha is a vampire.

c. *[That Marsha is a vampire]$_1$, Ted adores/condoned/criticized/studied t$_1$.

Such CP topicalizations are in general only licit when the t$_1$ position otherwise accepts that clauses, as (15b, c) illustrate, suggesting (15a) represents that clause topicalization. But via the same logic by which Principle C fails to block of (14a), it would also wrongly not yield a Principle C violation in the strong effect case (15a) either.

2.3 Defect 3: The Secondary Strong Crossover Effect

A third difficulty with the original Principle C claim relates to data like (16), also found Postal (1971: 90).

(16)a. [Whose$_1$ cousin]$_2$ did you convince ⊄him$_1$/⊄him$_2$ I had run over t$_2$?

b. the nurse [[whose$_1$ father's]$_2$ sisters]$_3$ I convinced ⊄her$_1$/⊄him$_2$/⊄them$_3$ that you would contact t$_3$

Here the trace Chomsky's analysis posits, even if categorized as an R-expression and c-commanded by a pronoun, is only wrongly bound under Principle C when linked to the *entire* questioned or relativized

phrase. But anaphoric linkage is equally banned for the contained NPs, which do not link to any traces. Further terminology is helpful. I take restrictions banning anaphoric linkages like that between pronouns and the entire extracted phrases in (1) and (16) to represent the *Primary* strong effect, and those banning such linkages between the pronouns and (certain) *sub*constituents of the entire extracted phrase to constitute the *Secondary* strong effect. The latter has been extensively discussed; see e.g. Jacobson (1976, 1977); Higginbotham (1980a, 1980b, 1983); Chomsky (1981: 89); van Riemsdijk (1982); Koopman and Sportiche (1982/3); van Riemsdijk and Williams (1981, 1986); Barss (1986); Engdahl (1986: 302); Kuno (1987: 55f, 60); Koster (1987: 81); Lasnik and Urigereka (1988); Safir (1996, 1998); Culicover (1997). But there seems to be no firmly established trace-theoretic solution.

And, as Kuno (1987: 61) states: "Chomsky [(1981)] admits that there are many problems that arise in this connection but says that it is beyond the scope of his book. He dismisses trace theory with structured trace and continues to adopt trace theory with empty category. He thus leaves unexplained the fact that he cannot be coreferential with whose in (8.14)" Kuno's (8.14) is an example like (16a).

Minimally then, Principle C applied to the Surface Structure, which is what was originally claimed, [5] fails to induce all the attested Strong Effects. So the secondary strong effect undermines the original idea that recognition of traces could reduce the strong effect to a c-command condition referencing *Surface* Structures. [6] Much discussion of the secondary effect involves appeal to so-called *reconstruction*, which time precludes discussing. But I return to the issue in effect when discussing the copy trace view.

2.4 Defect 4: The Asymmetry Property

Surely the gravest previously noted defect of Principle C accounts of the strong effect relates to an asymmetry. In standard strong effect cases like (1), the extractee is *the antecedent of the pronoun* whose 'crossing' yields the violation. It is such cases, involving question phrases or relative pronouns, that Culicover, Wasow and Chomsky concentrated on almost exclusively; for them, a Principle C approach might have some initial plausibility.

But consider (17).

(17)a. Postal (1971: 143): $\subset$Myself$_1$, I_1 can't begin to understand t_1.

b. Postal (1971: 143): $\subset$[To myself$_1$]$_2$, I_1 never send things t_2.

Evidently, early strong effect work considered anaphoric linkages where a topicalized reflexive pronoun or PP containing such was well-formed in typical strong effect contexts. Chapter 16B of Postal (1971) was

devoted to the fact that pronouns could licitly topicalize over their antecedents. Special devices were proposed to deal with the contrast between these cases and (18).

(18)a. $\subset$Fred$_1$, he$_1$ can't begin to understand t_1.

b. $\subset$[To Fran$_1$]$_2$, she$_1$ never sends things t_2.

Yet, under Chomsky's empty category Principle C account, the *well-formed* binding in (17a) yields no less a violation of Principle C than the *ill-formed* binding of (18a), as Kuno (1987: 81-82) already observed: "But trace theory does not distinguish…the trace of a full NP and that of a pronominal or reflexive, and therefore is incapable of distinguishing the two situations. This casts a serious doubt on the very foundation of trace theory."

The same factual pattern emerges in cleft structures and the restriction to extraction to the front of the clause *immediately* containing the antecedent characteristic of (17) is arbitrary:

(19)a. $\subset$Herself$_1$, I am sure that Gladys$_1$ doesn't want to vote for t_1.

b. $\subset$It is herself$_1$ that I am sure that Gladys$_1$ doesn't want to vote for

c. $\subset$Himself$_1$, they found out that Eddy$_1$ had talked to Edna about t_1.

d. $\subset$It was himself$_1$ that they found out that Eddy$_1$ had talked to Edna about t_1.

Postal (1971) gave one well-formed example, namely, (20), containing an extracted *non*-reflexive pronominal

(20) Postal (1971: 158): $\subset$[To him$_1$]$_2$, [the man]$_1$ claimed you were engaged t_2.

But that work took (20) to be exceptional and assumed topicalization of a *non-reflexive* pronoun in standard strong effect configurations yielded violations; see (21).

(21) Postal (1971: 143) (see also Postal (1971: 145, 149))

a. $\subset$Her$_1$,Barbara$_1$ claimed that Tony hated t_1.

b. $\subset$Him$_1$, Harold$_1$ wanted Betty to visit t_1.

c. Postal (1971: 158): $\subset$Him$_1$ the man$_1$ claimed you were engaged to t_1.

In retrospect, my earlier claims about (21) seem fundamentally mistaken. While certain speakers reject such examples, [7] they do not present the sharply impossible anaphoric linkages of true strong effect violations. Topicalized pronoun examples of this sort should thus *not* be assimilated to sentences obtained by interchanging the relevant antecedents and pronouns, which yields unchallenged strong effect violations like (22). [8]

(22)a. $\subset$Tony$_1$, he$_1$ said Harry insulted t_1.

b. $\subset$[That man]$_1$, he$_1$ claimed you were engaged to t_1.

c. ⊄It was Tony who$_1$ he$_1$ said Harry insulted t_1.

d. ⊄It was that man who$_1$ he$_1$ claimed you were engaged to t_1.

Summarizing then, the strong effect is limited as in (23).

(23) Strong Effects occur only in structures in which:

a. There exist phrases A, B such that A antecedes B; b. A is extracted.

While (23a) restates a banality, (23b) distinguishes cases like (22) from those where a pronominal is extracted, as in (21) and (i) of note 8. I refer to this difference as *the Asymmetry Property*. A viable account of the strong effect must deal with minimal Asymmetry Property contrasts like (24).

(24)a. ⊄Who$_1$ did the directors convince him$_1$ that Jane should vote for t_1?

b. ⊂It was himself that$_1$ the directors convinced Jane that he$_1$ should vote for t_1.

c. ⊄the dancer who$_1$ I promised her$_1$ that you would visit t_1

d. ⊂Her(self)$_1$, Joan$_1$ never promised me that you could visit t_1.

But Chomsky's original principle C account draws no such distinction and so is again robustly counterexemplified by data easily available in Postal (1971). Chomsky simply ignored these facts. [9]

More generally, the asymmetry problem was apparently not recognized internal to *published* trace-theory literature until fairly late in the 1980s, although it is noted in earlier unpublished theses; see Sportiche (1983); Barss (1986) and Browning (1987). For published trace-theoretic work, the earliest citations seem to be Williams (1986: 288) and Koster (1987: 78-79). The latter remarks: "If there is a construal chain that makes it possible to identify the trace with reflexive features, the sentence is grammatical, even if the trace is A'-bound from COMP:

(122) Himself$_i$ [O$_i$ [he$_i$ does not really like t_i]]"

Lasnik and Uriagereka (1988: 81-82, 157) consider material parallel to that in Kuno (1987: 81-2), showing the Principle C account makes erroneous predictions about topicalization of reflexive and non-reflexive pronouns. But this work treats the issue as newly noted, ignoring the extensive support for this conclusion in Postal (1971). [10]

2.5 Summary

So far then I have cataloged those objections to Chomsky's original Principle C approach to the strong effect already found in the literature and listed in (25):

(25)a. the stipulative character of the critical assignment of relevant traces to the category R-expression;

b. the existence of strong crossover effects in *non-NP* extraction cases;

c. the secondary strong crossover effect;

d. most seriously of all, the asymmetry property.

Section 3 New Objections to Principle C Accounts

3.0 Remarks

Flaws in the original Principle C approach *not* to my knowledge already found in the literature include diverse cases where the c-command condition required for Principle C relevance fails to hold between offending pronoun and extraction site.

3.1 Defect 5: The Offending Pronoun is in a Prepositional Phrase

The first such case is relatively minor. Example (26) shows that at best, c-command is not the right notion for any Principle C formulation intended to capture strong effects:

(26)a. ⊄[Which lawyer]$_1$ did Mike fail to mention [$_{PP}$ to her$_1$] that we had praised t_1?

b. ⊄[Which lawyer]$_1$ did Mike fail to tell her$_1$ that we had praised t_1?

Since the pronoun in (26a) fails to c-command the trace position, no Principle C violation can be induced. Nonetheless anaphoric linkage is as impossible as in (26b). This problem parallels others PPs raise for anaphoric description and might just support replacing c-command with the notion suggested for related reasons in (27).

(27) Pesetsky (1995: 173): "For example, we might define a relation called EBPP-*command* ("everything-but-PP-command") as a component of the notion "binding" (cf. Lasnik's (1976) notion of Kommand).

(453)a. α EBPP-commands β iff the first non-PP that dominates α also dominates β.

b. α binds β iff α EBPP-commands β, α precedes β, and α and β are coindexed.

Such a theory would account for the interaction of prepositions with binding phenomena. Nonetheless, (453) would not explain this interaction. (453) cannot not tell us why PPs fail to count for command, precisely because this fact is stipulated."

A restatement of Principle C in terms of (27) would correctly block (26), and is independently motivated for Principle C by *non-crossover* data like (28):

(28)a. ⊄Mike failed to mention [$_{PP}$ to [some lawyer]$_1$] that he respected [that lawyer]$_1$.

b. ⊂Mike talked [$_{PP}$ to Sharon$_1$] about herself$_1$.

So (26) indicates further sloppiness in Chomsky's earlier proposals, but not a grave technical problem.

3.2 Defect 6: The Offending Pronoun is in a Coordinate Phrase

The issue for a Principle C account raised by PP data has a partial analog in *coordination* data like (29), representing the second new c-command problem.

(29)a. ⊄[Which nurse]$_1$ did Mike convince Jim and her$_1$ that you voted for t_1.

b. ⊄It was that nurse who$_1$ Jim and she$_1$ said that you would hire t_1.

c. ⊄It doesn't matter [what nurse]$_1$ they arranged for Jim and her$_1$ to tell you that I would hire t_1.

d. ⊄[What woman]$_1$ did they place an alligator between Jim and her$_1$ while interviewing t_1?

These examples illustrate what I believe is the general truth in (30).

(30) If a context C which induces strong violations is mapped into a different one *solely* by replacing the offending pronoun P in C by a conjunction of NPs *including* P, binding of P by the extractee *remains impossible*.

Evidently though, given that the pronoun in such coordinate structures is a subconstituent of a larger NP, it cannot c-command the trace position, and PP invisibility would not help. Designing some analog to (27) which ignores *coordinate* nodes would be misguided, given (31):

(31)a. ⊂Mike convinced Jim and her$_1$ that you voted for [that nurse]$_1$.

b. ⊂Jim and she$_1$ apparently (both) said that you would hire [that nurse]$_1$.

c. ⊂They arranged for Jim and her$_1$ to tell you that I would hire [that nurse]$_1$.

d. ⊂They placed an alligator between Jim and her$_1$ while interviewing [that woman]$_1$.

These data show informally that undoing extractions like those in (29) yields examples *not* containing anaphoric linkage violations. So contrary to instances considered so far, where violations in putative strong effect cases parallel those found between pronoun positions and pre-movement extractee positions, not so in (29)/(31).

With respect to this and other cases introduced below, a Principle C defender might deny that the problematic cases, here (29), represent strong effects. Such an approach is suspect because it means recognizing some *independent* binding constraint to block (29). Worse, examples like (29) manifest key defining features of the strong effect; they are insensitive to the PP/NP distinction, manifest the asymmetry property and reveal primary and secondary variants; see (32):

(32)a. ⊄Jane$_1$, [from whom$_1$]$_2$ Ted and she$_1$ said the police had hidden the truth t_2,

b. ⊄Jane, who(m)$_1$ Ted mentioned to Mike and her$_1$ that you would call t_1.

c. ⊂It was her who(m)$_1$ Mike and Jane$_1$ said you would call t_1.

d ⊄[Whose$_1$ niece]$_2$ did Mike and ⊄she$_1$/⊄she$_2$ claim that you had insulted t_2?

The Principle C account's failure to handle coordination facts is thus hardly to be rectified by invoking a phenomenon distinct from the strong effect.

While the coordinate data just cited raise real issues for a Principle C account, these are relatively tame when compared to facts like (33):

(33)a. ⊄It was [Jane$_1$ and Barbara$_2$]$_{1,2}$ who$_{1,2}$ Mike respectively convinced her$_1$ that you would call t$_1$and tried to convince her$_2$ that I would call t$_2$.

b. ⊄[Which two women]$_{1,2}$ did Mike respectively convince her$_1$ that you would call t$_1$ and try to convince her$_2$ that I would call t$_2$?

Here a Principle C treatment based on traces not only fails to induce the manifested strong effects. Rather, movement/trace approaches to extraction have not even shown how to provide basic analyses of such structures and, of course, standard treatments of extraction in general do not even mention them.

3.3 Defect 7: The Offending Pronoun Is in an Exceptive Structures

The third new objection connected to a failure of c-command between pronoun and extraction site relates to *exceptive* structures such as (34):

(34)a.⊄[Nobody but/except (for)/other than Vanessa$_1$]$_2$ could they convince her$_1$ you would invite t$_2$.

b. ⊂[Nobody related to/fond of/interested in Vanessa$_1$]$_2$ could they convince her$_1$ you would invite t$_2$.

c. ⊂[Nobody but her$_1$]$_2$ could they convince Vanessa$_1$ you would invite t$_2$.

d. ⊄Vanessa$_1$, they convinced [everybody but her$_1$]$_2$ that you would invite t$_1$.

e. ⊂Her$_1$, they convinced [everybody but Vanessa$_1$]$_2$ that you would invite t$_1$.

While it might be claimed that (34a) is not really a *new* problem, since it represents essentially only a further type of *secondary* strong effect, this is really wrong. For normally there is no secondary strong effect with *definite referential* NPs, as the contrasting (34b) shows. With respect to this property, there may, however, be individual variation; for instance, the anaphoric linkage in (35) is marked bad, while for me it is perfect:

(35) Pesetsky (1995: 270)

⊂/⊄[Which picture of Tom$_1$]$_2$ did he$_1$ say Sue had purchased t$_2$?

Example (34c) is not incompatible with a Principle C account, as that condition is satisfied. But a further genuine problem is seen in (34d). This does manifest illicit anaphoric linkage, although the pronoun cannot c-command the extraction site; so Principle C is not invoked. That (34a, d) are nonetheless strong effects is argued by the well-formed anaphoric linkages in (34c, e), showing that anaphoric linkages here manifest the Asymmetry Property.

A Principle C account defender might invoke here some analog of the concept proposed by Pesetsky or, alternatively, might claim that the index associated with the *inner* NP in an exceptive structure somehow percolates up to the outer NP. This could yield Principle C violations by converting (34a) to (36a) and (34d) to (36b):

(36)a.⊄[Nobody except $Vanessa_1$]$_2$/$_1$ could they convince her_1 you would invite t_2.

b. ⊄$Vanessa_1$, they convinced [nobody but her_1]$_2$/$_1$ that you would invite t_1.

In (36), the traces are arguably illicitly bound under Principle C by coindexed nodes. Precedents for such moves appear in trace-theoretic work on anaphora, e.g. Safir (1984; 1996), who proposes such a mechanism for structures like those involved in secondary strong effects; see (37).

(37) Safir (1996: 325): "(31) a. Q-chain

A Q-chain is a sequence of adjacent A-binding constituents [O_1, O_2,...,O_n] such that O_{m-1} binds a variable in O_m The initial O_1 of the Q-chain is the Q-chain head. The variable bound by 0_n is the Q-chain variable.

The Q-Chain Convention

Add the index of the Q-chain head to that of the Q-chain variable.

The extractions that create and extend Q-chains are predicated on the LF movement of the class of elements that move scopally at LF, namely, the so-called true quantifiers."

But the *particular* mechanism Safir advanced could not function for exceptives, as it only creates secondary index assignment originating from *quantificational* expressions, not with definite referential ones like Vanessa in (34a).

Moreover, claiming that the inner index of an exceptive is in general obligatorily assigned to the outer NP is untenable, given (38b, c, d):

(38)a. ⊄[Nobody except $Vanessa_1$]$_2$/$_1$ praised her_1.

b. ⊂[Nobody except ??her_1/$herself_1$]$_2$/$_1$ praised $Vanessa_1$.

c. ⊂[Nobody except $Vanessa_1$]$_2$/$_1$ praised $Vanessa_1$.

d. ⊄[Nobody except $Vanessa_1$]$_2$/$_1$ praised $herself_1$.

Obligatory secondary assignment would not only be consistent with (38a), but supported by it, given that it would block the bad anaphoric linkage under anything like Chomsky's binding Principle B. But it is nonetheless counterexemplified by (38b, c), where it would *wrongly* create Principle C violations and by (38d), which it would wrongly claim *satisfies* Principle A. It is not directly relevant here that the reflexive

variant of (38b) creates a problem for any analog of Chomsky's *Principle A*, as there is no obvious way the apparent anaphor herself could be bound.

Thus even if appeal to index reassignment mechanisms is allowed, it offers no way to keep Principle C consistent with data like (34a, d), under the empty category view of traces.

Facts rather parallel to those with exceptives are found with phrases constructed with only and even; see for example (39):

(39)a. $\not\subset$Vanessa$_1$, they convinced [even/only her$_1$]$_2$ that you would invite t$_1$.

b. $\not\subset$Vanessa, who$_1$, they convinced [even/only her$_1$]$_2$ that you would invite t$_1$,...

c. $\subset$Vanessa$_1$, they convinced [her$_1$ mother]$_2$ that you would invite t$_1$.

d. $\subset$Vanessa, who$_1$, they convinced [her$_1$ mother]$_2$ that you would invite t$_1$,...

Contrasts like that between (39a, c) and (39b, d) argue against treating (39a, b) as *weak* crossover violations.

Space forces passing over the rather parallel ordinary quantifier structures in (40) and (41).

(40)a. $\not\subset$[Each one/All/None of [those starlets]$_1$]$_2$ praised them$_1$.

b. $\not\subset$[None of [those stars]$_1$]$_2$ could they convince them$_1$ that you would invite t$_2$.

c. ?$\not\subset$[None of [them$_1$]]$_2$ could they convince [those stars]$_1$ that you would invite t$_2$.

d. ?$\not\subset$[Those stars]$_1$, they could convince [none of [them]$_1$]$_2$ that you would invite t$_1$.

e. $\subset$Them$_1$, they convinced [none of [those stars]$_1$]$_2$ that you would invite t$_1$.

(41) $\not\subset$[All of them$_1$/*themselves$_1$]$_2$/$_1$ praised [those stars]$_1$.

3.4 Defect 8: The Non-Crossover Effect

A fourth largely new objection to a Principle C treatment linked to its reliance on c-command involves data *lacking* a property invariably present in all the strong effects cited so far. In previous data, the extraction site uniformly *follows* the pronoun which the extractee cannot antecede. This property is not relevant to the Principle C account but it was, of course, to the proposal of Postal (1971), where it determined choice of the term 'crossover'. Nonetheless, (42) exemplifies cases manifesting the key features of standard strong effects other than the word order property whose extraction sites nonetheless *precede* the pronouns with which anaphoric linkage is impossible.

(42)a. Jacobson (1976: 12) attributed to William Leben

(i) *$\not\subset$Who$_1$ did the wolf mention his planning to eat t$_1$ to her$_1$?

(ii) *$\not\subset$Who$_1$ did Hamlet talk about his overhearing t$_1$ to him$_1$?

b. Koopman and Sportiche (1982/1983: 149), Safir (1984 :605):

⊄Who$_1$ did you give a picture of t_1 to him$_1$?

c. ⊄Who$_1$ did you paste photos of t_1 on him$_1$?

d. ⊄the nurse who$_1$ they bought sketches of t_1 from her$_1$

e. ⊄Jerome$_1$, Ira expressed contempt for t_1 near him$_1$.

f. ⊄It was Jerome$_1$ that Ira expressed contempt for t_1 near him$_1$.

While (42a-f) resemble standard primary strong effect violations in having extracted NPs which cannot anaphorically link to certain pronouns, they contrast in a second respect. As in the coordinate cases, the corresponding *pre*-extraction structures violate *no* constraint on anaphoric linkages and so not Principle C; see (43).

(43)a. ⊂You gave a picture of Claude$_1$/[some officer]$_1$/someone$_1$ to him$_1$.

b. ⊂They bought sketches of [some/that nurse]$_1$ from her$_1$.

c. Koopman and Sportiche (1982/3: 148) explicitly note the lack of c-command between the antecedent and pronoun positions in cases like (43a, b).

Actually, some speakers reject the *indefinite* versions of (43). I find them at worst stylistically heavy. Moreover, anaphoric linkage is less problematic when the pronouns are replaced by anaphoric lexical NPs; see (44).

(44) ⊂Earl gave a picture of [some officer]$_1$ to [that officer]$_1$.

This is relevant because such anaphora is also subject to strong effects.

I refer to the anaphoric linkage violations revealed in (42) as *Non-crossover* Effects. Some might hope to reduce non-crossover effects to the c-command requirement of Principle C via special constituent structure assumptions. Given that the linguistics from which the Principle C account arose is given to a vast expansion of recognized constituents, e.g. functional projections including agreement constituents, multiple constituents with empty heads, recursions on nodes like VP, etc., the possibilities are not small. Nonetheless, good evidence that such moves, whatever their independent validity, cannot succeed in reducing non-crossover effects to c-command conditions is provided by the fact that the extraction position can even be inside a subject.

The relevance of this requires a brief codicil. Even granting that, as generally claimed, subjects are *islands*, which in general bar extraction, and ignoring marginal acceptability cases like (45), one can still use such *ungrammatical* extractions to test binding hypotheses because of principle (46):

(45) Reinhart (1983: 120):

?[Which businessman]$_1$ did the gossip about t_1 cause a national scandal?

(46) Mere extraction from an island, even when yielding severe ill-formedness, does *not* inherently block anaphoric linkages if such are licit in the pre-extraction structure itself.

The truth of (46) appears in the fact that while (47b, d, f) are sharply ungrammatical, there is no more interference with the indicated anaphoric linkages than there is in the non-extraction cases (47a, c, e).

(47)a. ⊂I found that Jane and Mark$_1$ both said you would hire him$_1$.

b. ⊂*It was Mark who$_1$ I found that Jane and t_1 both said you would hire him$_1$.

c. ⊂I compared nobody but Michelle$_1$ to the woman who hated her$_1$.

d. ⊂*It was Michelle who$_1$ I compared nobody but t_1 to the woman who hated her$_1$.

e. ⊂Because Carla$_1$ was surly, Mike wouldn't call her$_1$.

f. ⊂*It was Carla who$_1$ because t_1 was surly, Mike wouldn't call her$_1$.

Returning to non-crossover effects, regardless of the status of extraction from the subject, anaphoric linkage is impossible in (48a, b), (49b) and (50b), instantiating the non-crossover effect with a subject-internal extraction site.

(48)a. ⊄*[Which businessman]$_1$ did gossip about t_1 annoy him$_1$?

b. ⊄*a businessman$_1$ who$_1$ gossip about t_1 was infuriating to him$_1$

(49)a. ⊂[Several friends of Jerome's$_1$] are talking about him$_1$.

b. ⊄*Jerome$_1$, who$_1$ several friends of t_1 are talking about him$_1$,

(50)a. ⊂[No future teacher]$_1$ did several friends of Vanessa's$_2$ describe t_1 to her$_2$.

b. ⊄*It was Vanessa who$_2$ [no future teacher]$_1$ did several friends of t_1 describe t_1 to her$_2$.

No tenable constituency assumptions could reduce these antecedence blockages to Principle C because a subconstituent of a subject cannot c-command elements of the VP even under the wildest proliferation of non-traditional categories.

Space also forces ignoring (51):

(51)a. ⊂[Most articles about Mary$_1$]$_2$, I am sure she$_1$ hates t_2.

b. ⊄*It is Mary who$_1$ [most articles about t_1]$_2$, I am sure she$_1$ hates t_2.

Reinforcing the point that strong effects are found in environments lacking c-command between a pronoun and its potential antecedent, (52) illustrates that the exceptive and non-crossover cases can be combined, with the expected strong effects:

(52)a. ⊄[No professor except Marsha$_1$]$_2$ did they hand [pictures of t_2] to her$_1$.

b. ⊄It was Marsha who$_1$ they handed [pictures of t_1] to no one but her$_1$.

For non-crossover effects then, the idea that anaphoric linkage constraints associated with extractions reduce to constraints holding in pre-extraction structures, which has been the base of all trace-theoretic approaches to the strong effect, seems to collapse, suggesting that the violations are in some way induced by extractions themselves.

That traditional strong effects and what are here called non-crossover effects are special cases of one unified phenomenon is supported by the existence of the four clear parallels between them listed in (53); see (54)-(66).

(53) Similarities between Standard Strong Effects and Non-crossover Effects

a. Both effects have primary and secondary variants.

b. Both types of secondary effect fail to appear when the extractees are e.g. definite referential NPs.

c. Both effects also exist in cases of anaphorically linked lexical NPs instead of pronouns, a property noted for the standard strong effect in McCloskey (1990).

d. Both effects manifest the asymmetry property.

First, there are restrictions paralleling those in secondary strong effect examples like (16), leading directly to a distinction between primary and secondary non-crossover effects. As far as I can determine, the latter have the same general properties as secondary strong effects. So, alongside the primary non-crossover effect example (54a) are secondary non-crossover violations like (54b, c). See also (55).

(54)a. ⊄[Which man]$_1$ did you paste photos of t_1 on him$_1$?

b. ⊄[[Which man]$_1$'s dog]$_2$ did you paste photos of t_2 on him$_1$?

c. ⊄the man [[whose$_1$ dog's]$_2$ trainer]$_3$ you pasted photos of t_3 on ⊄him$_1$/⊄him$_2$/⊄him$_3$

(55)a. Secondary Strong Effect: Higginbotham (1983: 407)

⊄[Which biography of [which artist]$_2$]$_1$ do you think he$_2$ wants to read$_1$?

b. Secondary Non-crossover Effect

⊄[Which biography of [which artist]$_2$]$_1$ do you think I should show a review of t_1 to him$_2$?

Secondary non-crossover effect cases also parallel extraction from subject primary non-crossover effects such as (48b) and (49b); see (56).

(56)a. ⊄a businessman [whose$_1$ son]$_2$ gossip about t_2 was infuriating to him$_1$

b. ⊄Jerome$_1$, [whose$_1$ sister]$_2$ several friends of t_2 are talking to him$_1$,

A second parallel between the two secondary effects strengthens their suggested unity. As touched on earlier, unlike question and restrictive relativization, certain extractions, topicalization, clefting and some non-restrictive relatives, may fail to yield *secondary* strong crossover effects, as in (57). These same extractions also fail to induce *secondary* non-crossover effects under analogous circumstances; see (58).

(57)a. ⊂[Carl's$_1$ neighbor]$_2$, they did not introduce him$_1$ to t_2.

b. ⊂It was [Carl's$_1$ neighbor]$_2$ that they introduced him$_1$ to t_2.

c. ⊂Carl, [whose$_1$ nurse]$_2$, they did not introduce him$_1$ to t_2,

(58)a. ⊂[Carl's$_1$ neighbor]$_2$, they did not paste any pictures of t_2 on him$_1$.

b. ⊂It was [Carl's$_1$ neighbor]$_2$ that they pasted some pictures of t_2 on him$_1$.

c. ⊂Carl, [whose$_1$ neighbor]$_2$, they did not paste any pictures of t_2 on him$_1$,

Consider (59a, b, c), where lexical NPs can be anaphorically linked.

(59)a. ⊂He gave a picture of a troll$_1$ to that troll$_1$.

b. ⊂He pasted a picture of a troll$_1$ on that troll$_1$.

c. ⊂Never show unflattering pictures of any trolls$_1$ to [those trolls]$_1$.

These are consistent with Chomsky's binding theory since the NP pairs satisfy Principle C, the only constraint relevant to anaphoric linkage between lexical NPs. That is, since in (59), in none of the lexical NP pairs does one c-command the other, neither binds the other. This contrasts with the situation in e.g. (60).

(60) ⊄A troll$_1$ (said he$_1$ had) pasted a picture of Rhonda on [that troll]$_1$.

But in extraction correspondents of the well-formed (59b), such as (61), there is, as for non-crossover effects with pronouns, an effect not reducible to properties of pre-extraction structures.

(61)a. ⊄[Which troll]$_1$ did he paste a picture of t_1 on [that troll]$_1$?

b. ⊄List all the trolls$_1$ which$_1$ he pasted pictures of t_1 on [those trolls]$_1$.

For any traces inside the picture NPs in (61) neither bind, nor are bound by, the demonstrative NPs. So an analog of the primary non-crossover effect exists for anaphoric lexical NPs. Principle C would again at best have to be supplemented by some further principle. Van Riemsdijk and Williams's treatment also fails for (61) since application of the non-c-command constraint on the NP-structures of the examples would not block them.

That the primary non-crossover effect exists with non-pronouns provides a third parallelism with the primary strong effect. For, as McCloskey (1990) observed, the latter also has a non-pronominal analog see (62). Moreover, variants of both secondary effects also exist with lexical NPs; see (63).

(62)a. ⊄[Which nurse]$_1$ did you convince that nurse$_1$ that you would hire t$_1$?

b. ⊄a troll, [which troll]$_1$ I saw [that troll]$_1$ pretend t$_1$ was an elf,

(63)a. ⊄[Which biography of [which space alien]$_2$]$_1$ did that space alien$_2$ prove t$_1$ was slanderous?

b. ⊄[Which biography of [which space alien]$_2$]$_1$ did Ernest write a letter about t$_1$ to that space alien$_2$?

The conclusion that the non-crossover and strong effects reflect the same principles is supported in a fourth way by the Asymmetry Property. For a similar feature arguably holds for the non-crossover effect. Compare (64a, b).

(64)a. ⊄It was Laura$_1$ who$_1$ I described several photos of t$_1$ to her$_1$?

b. ⊂It was her(self)$_1$ who$_1$ I described several photos of t$_1$ to Laura$_1$.

(65) ⊂I described several photos of her(self)$_1$, to Laura$_1$.

(66)a. ⊄It was Laura$_1$ who$_1$ I persuaded her$_1$ that you might hire t$_1$.

b. ⊂It was her(self)$_1$ who$_1$ I persuaded Laura$_1$ that you might hire t$_1$.

The anaphoric linkage in (64b) lacks the impossible status of that of (64a), typical of strong effect violations, and seems as good as the non-extraction case (65). Significantly, the properties of (64) seem to be essentially identical to those of analogs in classical strong effect environments like (66). So the non-crossover effect also only exists when antecedents are extracted, as in (23).

The extensive paradigmatic similarities between strong effects and non-crossover effects support taking both to reflect the same underlying principles. Since these cannot be reduced to Principle C for the strong non-crossover effect, it follows that this is incorrect for strong crossover effects as well.

Chomsky considered a single non-crossover effect in passing as in (67), stating that (67ai, ii) were *weak* crossover violations

(67)a. Chomsky (1982a: 38) echoing Koopman and Sportiche (1983: 149).

(i) ⊄Who$_1$ did you give a picture of t_1 to him$_1$?

(ii) ⊄Who$_1$ did you give a picture of him$_1$ to t_1 ?

(iii) "Both examples violate weak crossover as determined by the Bijection Principle…"

b. ⊄Anthony$_1$, I gave a picture of t_1 to him$_1$.

c. ⊄It was Anthony who$_1$ I gave a picture of t_1 to him$_1$.

d. ⊄Anthony, who$_1$ I gave a picture of t_1 to him$_1$,…

e. ⊄Anthony$_1$ was hard to give pictures of t_1 to him$_1$.

But this claim is undermined by the fact that (67b, c, d, e), which also involve illicit anaphoric linkages, have definite referential extractees. For, as noted at the outset and discussed in the works in (68a), such extractees do not in general induce *weak* crossover effects, as illustrated by the lack of effect in (68b, c, d):

(68)a. Lasnik and Stowell (1991); Postal (1993c); Safir (1996)

b. ⊂It was Anthony who$_1$ his$_1$ boss displeased t_1.

c. ⊂Anthony, who$_1$ his$_1$ boss displeased t_1,…

d. ⊂Anthony$_1$ was hard to describe his$_1$ new office to t_1.

While seemingly favoring Chomsky's claim, the badness of the anaphoric linkage in the definite extractee correspondent of (67aii) seen in (69a) is, I suggest, irrelevant. For I would argue that this anaphoric linkage violation is *not* a weak crossover effect but only a reflection of the requirement, whatever its basis, for a *reflexive* form in this environment; the presence of the latter yields the fine (69b):

(69)a. ⊄Anthony, who$_1$ I gave a picture of him$_1$ to t_1, …

b.⊂Anthony, who$_1$ I gave a picture of himself$_1$ to t_1, …

Example (69b) violates the Bijection Principle no less than (69a), indicating contra Koopman, Sportiche and Chomsky, the irrelevance of that condition to the facts under discussion.

3.5 Defect 9: Extraction from Adjuncts

A fifth objection to Principle C accounts based on empty category traces connected to a failure of c-command involves extraction from *adjuncts*. Since this is often barred, principle (46) is again potentially crucial. As is well known, backward linking of a pronoun object to an antecedent in an adjunct is frequently *permitted*, as in (70c, e):

(70)a. ⊄The doctor told her$_1$ that you loved Gladys$_1$.

b. ⊄It was Gladys who$_1$ the doctor told her$_1$ that you loved t_1.

c. ⊂The doctor told her$_1$ that story while treating Gladys$_1$.

d. ⊄It was Gladys who$_1$ the doctor told her$_1$ that story while treating t_1.

e.⊂It was her who$_1$ the doctor told Gladys$_1$ that story while treating t_1.

f. [Which patient's$_1$ child]$_2$ did the doctor tell ⊄her$_1$/⊄her$_2$ that story while treating t_2?

Here (70a) is an ordinary Principle C violation given that the object c-commands everything in the complement clause; (70b) is then a standard strong effect case attributed to Principle C, seemingly reducing to the same principle as (70a). Example (70c) is of course generally taken to show that an object does *not* c-command an element in an adjunct like that in (70c). If not, it is completely unexpected under a Principle C account that extraction from the position of Gladys in (70c) would yield a strong effect. But (70d) shows that it does. The contrast between (70d, e) reveals the asymmetry property, arguing that (70d) is a genuine strong effect, as does the secondary strong effect in (70f).

Parallel facts are seen in the different adjunct cases in (71) and (72).

(71)a ⊂The doctor jumped up enraged at her$_1$ after arguing with Gladys$_1$.

b. ⊄It was Gladys who$_1$ the doctor jumped up enraged at her$_1$ after arguing with t_1.

c. ⊂?It was her who$_1$ the doctor jumped up enraged at Gladys$_1$ after arguing with t_1.

d. [Which patient's$_1$ child]$_2$ did the doctor jump up enraged at ⊄her$_1$/⊄her$_2$ after arguing with t_2?

(72)a. ⊂The suggestion was never made to him$_1$ that you might consult [Dr. Felix]$_1$.

b. *⊄[Dr. Felix]$_1$, the suggestion was never made to him$_1$ that you might consult t_1.

c. *⊂Him$_1$, the suggestion was never made to [Dr. Felix]$_1$ that you might consult t_1.

d. *[Which patient's$_1$ child]$_2$ was the suggestion made to ⊄her$_1$/⊄her$_2$ that you could play with t_2?

The problem these cases raise is that to allow the anaphoric linkages in (70a), (71a), and (72a), the object pronoun position must *not* c-command into the adjunct. But to reduce the anaphoric blockages in e.g. (70b), (71b) and (72b) to Principle C, the object pronoun position must c-command into the adjunct. Such results are not jointly possible since the positions in the corresponding good and bad cases are seemingly identical.

These adjunct cases would though *not* be problematic if the suggestion of Williams given in full in (73) were valid. This claims that extraction from such adjuncts is permitted only because *reanalysis* turns the adjunct

into a complement of the main verb. If so, c-command between pronoun and extraction position would be established, reducing the strong effect to Principle C.

(73) Williams (1994: 71-2): "Suppose there is a reanalysis rule that moves the adjunct from adjunct position to complement position. In that position it will be able to participate in feature passing under the definition of relativized head:

(100) $[[\text{leave}]_{VP}\ [\text{with t}]]_{VP} \Rightarrow [\text{leave}\ [\text{with t}]]_{VP}$

The reanalysis will not affect the fact that the adjunct is not an argument and so will not endow it with the ability to originate a scope index; but it will permit it to pass up scope indexes that originate in arguments within it. So the trace, which is an argument of the preposition with, will be able to pass up its scope index in the reanalyzed structure. The reanalysis rule must be regarded as a "marked" possibility, to account for the semi-ungrammaticality of extraction from adjuncts."

Williams' description of this putative reanalysis is so terse and informal that I cannot see what the output structure would be in complex cases. As argued in Baltin and Postal (1996) and Chapter 8, other common invocations of reanalysis fail remarkably, suggesting that great caution is in order about this one as well.

Moreover, Williams specific reanalysis suggestion is untenable. First, if grammatical extractions from adjuncts depended on reanalysis of adjuncts as complements, such extractions would show the properties of extraction from complements. These include maximum freedom of category for extractees, whereas genuine extraction from adjuncts is extraction from selective islands (see Postal, 1998), and normally incompatible with most non-NPs, predicate nominals, etc. But extractions from the adjuncts at issue do not behave like extractions from complements but are only possible for a restricted range of non-subject *NPs*. Compare previous object NP extraction examples with the bad cases of (74) involving extractions of other elements.

(74)a. *the woman [for whom]$_1$ the doctor told me that while buying the ring t_1.

b. *[How long]$_1$ did the doctor tell you that while washing his hands t_1?

c. *[What kind of a specialist]$_1$ did the doctor tell you that story long after becoming t_1?

d. *[Underneath no elm tree]$_1$ did the doctor tell you that story after sitting t_1.

These data show that taking the extractions from adjuncts to involve reananlysis as complements just gives the wrong answer.

Second, if reanalysis existed in these cases, logic requires that it be either optional or obligatory. If *obligatory*, the good non-extraction case anaphoric linkages like those in (70a), (71a) and (72a) could not exist.

Therefore, the putative reanalysis must be *optional*. But if it is in general *optional*, then the bad extraction anaphoric linkages would have non-reanalysis structures and so could not follow from Principle C on the structure where reanalysis is *absent*.

The only way to avoid this conclusion would be to claim that the 'backwards pronominalization' can only exist when there is *no* reanalysis but that extraction from the apparent adjuncts is only possible *given* reanalysis. This is in effect claimed by Williams who generalizes to the assertion that backwards pronominalization into an adjunct is uniformly banned in the presence of extraction from that adjunct. This entails that such binding is banned even when there is no potential strong effect. The only actual support cited for this claim is (75):

(75) Williams (1994: 72)

$\not\subset$What$_1$ should I warn her$_2$ before giving Mary$_2$ t_1?

But even if the anaphoric linkage in (75) *is* bad, which I doubt, I do not find that the relevant type of backwards anaphora is in general incompatible with extraction. For me, the anaphoric linkages in all of (76) are fine:

(76)a. $\subset$What$_1$ they warned her$_2$ sternly before providing Mary$_2$ with t_1 was a rocket propelled bicycle.

b. $\subset$What$_1$ did the doctor try to talk to her$_2$ while poking Gladys$_2$ with t_1?

c. $\subset$[Which principle]$_1$ did the professor make fun of them$_2$ while lecturing [the first year students]$_2$ about t_1?

d. $\subset$[Which principle]$_1$ did the professor make fun of them$_2$ while lecturing about t_1 to [the first year students]$_2$?

e. $\subset$It was orange sherbet which$_1$ Sonia giggled at him$_2$ while feeding t_1 to [little Bobbie]$_2$.

If correct, the data in (76) provide a second reason why nothing like Williams' proposal offers an alternative to the view that (70b), (71b) and (72b) are strong effects whose offending pronouns fail to c-command the extraction site.

Section 4 The Copy Trace Version

4.0 Remarks

I turn to the copy trace version of the Principle C account of the strong effect. This conception of traces actually goes back at least to Chomsky (1981: 89-90), where it was considered to deal with the secondary strong effect problem, but *not* adopted: "The natural way to work this out in the present framework would

be to establish the convention for Move-α that when α is moved it is not deleted but left unchanged, apart from a feature D indicating that it is to be deleted in the PF-component…". [11]

At first glance, this modification seems to eliminate an array of defects which haunted the empty category trace version. Specifically, it seems to give a reason why the relevant traces *are* R-expressions. Second, it seems to solve the problem of strong effects induced by PP extraction, seen in e.g. (ib), and with no special assumptions about PPs. Third, it seems to resolve the secondary strong effect cases, treating these essentially like Riemsdijk and Williams' NP Structure account without the latter's special assumptions. Fourth, the copy theory of A-bar traces seems to resolve the asymmetry issue. For, remarkably, it seems to incorporate without special cost a version of Barss's (1986) modification of Chomsky's original proposal, under which the trace of each moved category is of the same type with respect to the *binding* theory as the extractee. The copy trace variant of the Principle C proposal thus seemingly yields correct answers for the cases in (77), all of which except for *a* are *mis*analyzed by the empty category version. [12]

(77)a. ⊄Who$_1$ did you persuade him$_1$ that Joan would marry t_1 = [who$_1$]?

b. ⊂Him$_1$, I persuaded Joe$_1$ that Joan would marry t_1 = [him$_1$].

c. ⊂Herself$_1$, I persuaded Mike that Joan$_1$ would discuss t_1 =[herself$_1$].

d. ⊄[To Marsha$_1$]$_2$, I persuaded her$_1$ to get Bill to talk t_2 = [to Marsha$_1$]$_2$.

A violation ensues in (77a) but not in (77b, c), just as desired, since only in the former is the copy trace an R-expression. Moreover, a violation is properly specified for (77d), because the pronoun improperly binds the occurrence of Marsha *inside* the copy trace.

Despite these improvements though, the proposal remains non-viable. Least seriously, it does not solve the defect of 'crossed' pronouns inside PPs, as in (26); the copy trace structure still fails to induce a strong effect violation under a c-command statement of Principle C for cases like (78).

(78) ⊄ Marsha$_1$, I mentioned to her$_1$ that Bill was infatuated with t_2 = [Marsha$_1$]$_2$.

And it also fails to induce a Principle C violation in CP topicalization cases like (15a).

I consider other unresolved flaws presently. But a deeper issue is the independent tenability of the assumption that each extraction can be associated with a trace copy of the extractee.

4.1 The General Untenability of the Copy View of Traces

Real doubts about this claim should have arisen given that twenty five years ago Perlmutter, in a rarely if ever credited work, arguably among the first associating trace-like elements with movements, suggested a view in which each extraction left a resumptive pronoun, under a different name; see (79):

(79) Perlmutter (1972: 73)

"(1) Rules that 'chop' constituents over variables in the sense of Ross (1967) do not exist. (2) Rules that appear to be 'chopping rules' are actually 'copying rules' that leave behind a *shadow pronoun* in the position of the constituent that has apparently been 'chopped'."

Moreover, Perlmutter gave factual arguments for the pronominal character of the invisible elements. While works like Hirschbühler (1975) and Cinque (1975) soon probably refuted the *general* claim, nothing to my knowledge has ever refuted the *particular* assertion that French non-restrictive relative extraction sites manifest pronominal properties. Despite this, that extraction type induces strong effects just as English non-restrictive relative extraction does. So, in terms of the copy trace based Principle C theory, these French cases would have to be assigned R-expression traces, thereby failing to account for the pronominal characteristics Perlmutter documented. Somehow assigning them pronominal traces would account for Perlmutter's observations, but would fail to yield the strong effects.

One need not depend on French; an argument with the same logic arises from observations about the class of English extractions referred to as *B-extractions* in Postal (1994b, 1998). These include NP topicalization, NP clefting and non-restrictive NP extraction. Using Perlmutter's methodology, I have argued that these extractions manifest *pronominal* gaps. The factual basis for this claim is that the extractions in question, though not the other NP extractions called *A-extractions*, are incompatible with positions, called *Antipronominal Contexts*, banning *weak* definite pronouns. [13] At issue then are facts like (80)-(84), revealing correlations between *ill-formed* B-extraction sites and antipronominal contexts. These sites are, however, critically, *not* incompatible with A-extractions.

(80)a. Marshall painted his trailer green/*it.

b. *Green$_1$/[*That color]$_1$, Marshall never painted his trailer t_1.

c. *It was that color which$_1$ Marshal painted his trailer t_1.

d. *Green$_1$, which$_1$ Marshall painted his trailer t_1,

e. [Which color]$_1$ did Marshall paint his trailer t_1?

f. the color which$_1$ Marshall painted his trailer t_1

(81)a. Jerome was speaking in Latin/*it.

b. *[That language]$_1$, no one was speaking in t_1.

c. *It was Latin which$_1$ Herman was speaking in t_1.

d. *Latin$_1$, which$_1$ Herman was speaking in t_1, ...

e. [Which language]$_1$ was Herman speaking in t_1?

(82)a. Joe met some other woman/*her yesterday who was telepathic.

b. [Some other woman]$_1$, Joe met t_1 yesterday (*who was telepathic).

c. It was some other woman who$_1$ Joe met t_1 yesterday (*who was telepathic).

d. Some other woman, who$_1$ Joe met t_1 yesterday (*who$_1$ was telepathic), screamed.

e. [Which other woman]$_1$ did Joe meet t_1 yesterday (who was telepathic)?

(83)a. It was that death ray/*it that Mike used.

b. *[Some other death ray]$_1$, it was t_1 that Mike used.

c. *It was that death ray that$_1$/which$_1$ it was t_1 that Mike used.

d. *that death ray, which$_1$ it was t_1 that Mike used, ...

e. [Which death ray]$_1$ was it t_1 that Mike used?

f. [Whichever death ray]$_1$ it was t_1 that Mike used, it didn't work.

(84)a. The concert lasted the whole week/*it.

b. *[The whole week]$_1$, the concert lasted t_1

c. *It was the whole week that$_1$ the concert lasted t_1.

d. *The whole week, which$_1$ the concert lasted t_1, ...

e. [What length of time]$_1$ did the concert last t_1?

f. [No matter how long]$_1$ the concert lasted t_1, ...

These and numerous other cases of the same type argue that English B-extraction sites are linked to non-overt resumptive pronouns. But as is well known, and touched on variously above, these B-extractions nonetheless induce strong effects when the extractee is of the type characterized as an R-expression in Principle C terms; see (85)

(85)a. ⊄[That woman]$_1$, Joe persuaded her$_1$ that you would hire t_1.

b. ⊄It was that woman who$_1$ Joe persuaded her$_1$ that you would hire t_1.

c. ⊄That woman, who$_1$ Joe persuaded her$_1$ that you would hire t_1, is waiting.

So, as in the French cases Perlmutter studied, the copy view of traces is incompatible with evidence showing the pronominal character of a certain proper subset of all extraction sites, including those of English B-extractions, a pronominal character *not* dependent on *pronoun* extraction.

A parallel argument against the copy trace view is derivable from the observations in Cinque (1990) and Postal (1993a, 1994a, 2001a, 2001b) involving parasitic gaps (P-gaps). These works argue that nominal P-gaps are pronominal in the sense just characterized. [14] For instance, P-gaps are impossible in the antipronominal contexts of (80)-(84), as only partly illustrated in (86):

(86)a..*[Whatever color]$_1$ Marshall hated t_1 after painting his trailer pg_1,...

b. *[What length of time]$_1$ did Alice waste t_1 while trying to prove the concert lasted pg_1?

c. [What woman]$_1$ did Joe watch t_1 play tennis who was telepathic?

d. [What woman]$_1$ did Joe discuss t_1 while watching pg_1 play tennis (*who was telepathic)?

Here the bad version of (86d) reinforces the point by showing the contrast between ordinary extraction, which is insensitive to antipronominal contexts, and P-gap extraction, whose gaps are pronominal.

Despite that, P-gaps induce strong effects, as probably first noted in Barss (1986), thus contrasting with topicalized or clefted visible pronouns. In Principle C terms then, they should involve copy traces of the R-expression type. But this is incompatible with the pronominal nature of the gaps. These points are illustrated in (87):

(87)a. Barss (1986: 378)

⊄It's John who$_1$ Mary voted for t_1 after he$_1$ asked someone to nominate pg_1.

b. Cinque (1990: 150)

⊄Who$_1$ did they find t_1 hostile before he$_1$ realized they wanted to help pg_1?

c. ⊄[What woman]$_1$ did Joe discuss t_1 while she$_1$ tried to persuade Mike to hire pg_1?

That (87) involves genuine strong effects is supported by the fact that the asymmetry property manifests, although there is one difficulty; see (88):

(88) Barss (1986: 377)

⊂It was himself that$_1$ John$_1$ nominated t_1 before he$_1$ voted for pg_1.

The difficulty is that while Barss (1986: 378) claimed that the anaphoric linkage in (89a) involving an extracted pronoun rather than reflexive was acceptable, for me it is impossible, as is that in (89b). But perhaps these judgments are linked to the fact that despite accepting things like (89a) and the short forms of (89b, c), I find (89b, c) themselves ungrammatical.

(89)a. Barss (1986: 378)

$\subset_{Barss}/\not\subset_{Postal}$It was him that$_1$ John$_1$ claimed Mary liked t_1 even though he$_1$ knew she hated pg_1.

b. ⊄It was himself that$_1$ John$_1$ claimed Mary liked t_1 (*even though he$_1$ knew she hated pg_1).

c. It was himself that$_1$ John$_1$ claimed Mary liked t$_1$ (*even though I knew she hated pg$_1$).

Putting all these facts together, and assuming (89) is somehow resolved consistently with the asymmetry property, P-gaps are seen to be systematically pronominal and yet to induce strong effects, inconsistent with a Principle C account based on the copy trace view, which could only predict the strong effects by taking the relevant P-gaps to be R-expressions.

An additional general problem for the copy trace view relates to the fact known since the 1960s illustrated in (90):

(90)a. ⊄She$_1$ criticized some of the men who visited Betty$_1$.

b. Postal (1971: 85):

⊂[Which of the men who visited Betty$_1$]$_2$ do you think she$_1$ criticized t$_2$?

Left extractions of the sort inducing strong effect violations have the effect of *eliminating* certain pre-extraction anaphoric blockages which would be due to Principle C under Chomsky's binding theory. Under a direct modification of (90b) in terms of the copy trace theory, the result, as in effect previously noted by Kuno, is (91), which *wrongly* induces a Principle C violation.

(91) See Kuno (1987: 63)

⊂[Which of the men who visited Betty$_1$]$_2$ do you think she$_1$ criticized t$_2$ = [Which of the men who visited Betty$_1$]$_2$

With no reference to Kuno's criticism, it has been proposed by Chomsky (1995a) following Lebeaux (1991) that adjuncts, including restrictive relative clauses, are introduced by generalized transformations in a way which avoids the violation, presumably by yielding a copy trace in (91) which does *not* contain Betty. Such proposals are supported by citing supposed contrasts from Riemsdijk and Williams (1981) and Freidin (1986) to the effect in (92):

(92) Chomsky (1995a: 204)

a. ⊄[Which claim that John$_1$ was asleep]$_2$ was he$_1$ willing to discuss t$_2$?

b. ⊂[Which claim that John$_1$ made]$_2$ was he$_1$ willing to discuss t$_2$?

I do not perceive this distinction and find the anaphoric linkages in *both* (92a, b) acceptable. And I find it even clearer that the anaphoric linkages are well-formed in (93a, b), just as much as in the adjunct case (93c), a judgment supported by its consistency with (93d, e): [15]

(93)a. ⊂[The claim that [the director]$_1$ was corrupt]$_2$, he$_1$ was unwilling to discuss t$_2$

b. ⊂[That [the director]$_1$ was corrupt]$_2$, everyone knew that he$_1$ would always be able to deny t_2 with a straight face.

c. ⊂[The claim that [the director]$_1$ made t_2]$_2$, he$_1$ was unwilling to discuss t_2

d. Ross (1973: 198)

⊂[That Ed$_1$ was under surveillance]$_2$, he$_1$ never realized t_2.

e. Culicover (1997: 333)

⊂[That John$_1$ had seen the movie]$_2$, he$_1$ never admitted t_2.

Consequently, the complement versus adjunct distinction does not seem relevant, Lebeaux's strategem does not work, the problem for the copy trace theory raised by the incorrect implications of (91) remains undealt with, and so yields a further objection to the copy trace theory.

Still further direct problems for the copy trace view are found in (94), involving reflexives which evidently some, including me but not all speakers, accept.

(94)a. Barss (1986: 276)

⊂It was himself who$_1$ John$_1$ said Mary loves t_1.

b. *⊄Mike$_1$ said that Gladys would never marry himself$_1$.

c. ⊂Mike$_1$ said that himself$_1$, Gladys would never marry t_1.

d. ⊂It was himself who$_1$ Mike said that Gladys would never marry t_1.

e.. Lasnik and Saito (1992: 110)

⊂John$_1$ thinks that himself$_1$, Mary likes t_1.

f. Pollard and Sag's (1992: 295)

⊂It was herself that$_1$ Mary$_1$ thought Bill admired t_1 most.

g. ⊂Herself$_1$, I heard Barbara$_1$ claim that Tony hated t_1.

h. ⊂Himself$_1$, I couldn't convince Harold$_1$ to let Betty visit t_1.

i. ⊂It was himself that$_1$ they told Jim$_1$ to have Betty tutor t_1.

For in these cases, a copy trace view induces reflexive traces in positions where actual reflexives are impossible.

Finally, recall the various different non-PPs cases where the empty category view of traces permitted no reduction of strong effects to Principle C because the offending pronoun failed to c-command the

extraction site. These were the coordinate, exceptive, non-crossover effect, and extraction from adjunct cases. Obviously, enrichment of the structure of traces has no effect whatever on this flaw; so the second version of the Principle C reduction idea inherits the defect of not inducing strong effects in a range of structures where they actually occur.

I have tried to show then that, despite a certain initial *relative* success compared to the empty category version, the copy trace version of a Principle C account ultimately cannot rescue the Principle C view of strong effects. More generally, I have attempted to indicate that the copy trace idea is itself untenable as a general conception of the nature of extractions, for various reasons, some touched on by Perlmutter more than twenty five years ago.

5. Substantive Conclusions

To conclude, Chomsky's claim (4) was clearly untenable when made, remained untenable through the period preceding adoption of the copy view of traces, and is also untenable under that view, which is itself in general untenable. Moreover, given the problems the overall conception faces, including a rich range of cases where strong effects exist in the absence of any c-command between pronoun and extraction site, the prospects for future successful revision seem extremely poor. Further, the Principle C account incorporates the idea that strong effects can, via appeal to traces, be reduced to the principle barring anaphoric linkage between a form F and an anaphoric form A, where A is found in a higher constituent. Considerable evidence was presented that this more general idea, which dates to the original trace proposals of Culicover and Wasow, is also wrong.

If correct, given the limited current alternative descriptions of the strong effect, the conclusions show that the nature of the principles *truly* underlying this phenomenon should be regarded as essentially open.

Further, the Principle C account of the strong effect is often, as in (95), cited as evidence supporting the postulation of the *non-pronominal* traces on which it depends.

(95) Lasnik and Uriagereka (1988: 41)

"Note that this account of so-called strong crossover demands that Condition C be applicable to derived structure, a conclusion we reached on other grounds in section 1.3.2. Furthermore, to the extent that this analysis is successful, it provides a second argument for the basic tenet of Trace Theory—that movement rules leave traces. If there were no traces, then there would be no R-expression for Condition C to constrain."

Significantly then, present conclusions support the claim that there is no real factual support for any trace-like objects connected with extraction *except* invisible resumptive pronouns of the sort originally posited by Perlmutter. For the latter, I believe substantial evidence is available, in Obenauer (1984, 1985, 1986, 1992) as well as in Cinque (1990) and Postal (1994b, 1998), although this claim is sharply challenged in Levine (2001). This support is of essentially the sort that, as argued in Sag and Fodor (1995), has *never* successfully been provided for *non*-pronominal traces.

6. Methodological Conclusions

A theoretical linguistic proposal like Chomsky's Principle C hypothesis about the strong effect could have been, as was, I believe, the proposal in Postal (1971), wrong without being disgraceful But as the text and notes 4, 6, 9, 10 and 11 support, the moves to introduce claim (4) that Chomsky's (1981) Principle C explained the strong effect not only embody a factually and theoretically untenable grammatical proposal, they also flout minimal standards of reasonable linguistic scholarship. In particular, it was shown that in addition to being saturated with theoretical and factual inadequacies which were not treated openly, no attempt was made even to keep claim (4) consistent with the original strong effect data in Postal (1971). The assertion ten years later that Principle C entailed the strong effect has been shown to have ignored (i) induction of strong effects by non-NP extractions; (ii) the secondary strong effect and (iii) the asymmetry property, all of which were documented in Postal (1971). [16]

There is another aspect of the inadequacy of the development of (4) as a linguistic claim worth stressing. While it has been taken to be an actual linguistic discovery that the strong effect is an entailment of Principle C (given its supporting assumptions about traces, traces as R-expressions, etc.), it is notable that this claim exists only as scattered passing remarks in various works. Not only is there no complete section of any work, no article, no monograph devoted to its justification, there is hardly a full paragraph. Surely this fact combined with the extraordinary shoddiness of the support for the proposal and the exceptional disdain for standards involved in its promulgation should suggest a moral. When someone claims in passing to have a major theoretical syntactic result but can neither produce nor cite any work devoted to justifying the supposed accomplishment, one must rightly suspect that, as in this case, one is dealing with junk syntax.

Notes

1 The gap/coindexing notation in (1a, b) and throughout is a descriptive device. It represents no commitment to the linguistic reality of traces or coindexing.

2 In (1) and hereafter, the notations in (ib, c) indicate the success or failure of indicated anaphoric linkages. In some cases, failure is associated with ungrammaticality, in others not. Some examples are thus doubly marked.

(i) Notations:

a. * = as standard, the indicated expression is *ill-formed*.

b. absence of * = as standard, the indicated expression is *well-formed*

c. $\subset$ = the anaphoric linkage indicated by the cosubscripting is *well-formed*

d. $\not\subset$ = the anaphoric linkage indicated by the cosubscripting is *ill-formed*

3. The following indicates that the essence of Principle C is due to George Lakoff.

a. Lakoff (1976: 301)

(i) "(168) is...an output condition that applies only to anaphoric noun phrases that are not pronouns."

(ii) Lakoff's (168) was:

Structural Description

X - NP - X - NP - X

1 2 3 4 5

The sentence is unacceptable if: {a} 2 is the antecedent of 4; {b} 2 commands 4; {c} 4 is not a pronoun

Lakoff's formulation differs from Chomsky's later one chiefly in using command rather than c-command, in appealing to a notion of antecedent, and in being offered as a rule of English rather than a universal.

4 This permits the first of several asides about the *seriousness* of the proposal under discussion. Formulation of a theory denying that the strong effect is induced by PP extraction a decade after the initial work on the topic was, to put it indulgently, remarkably careless; data showing the contrary is found in the original source and other early work; see (i).

(i)a. $\not\subset$Who$_1$ did he$_1$ claim you were engaged to t_1?

b. Postal (1971: 157, example (30.67b)):

$\not\subset$[To whom$_1$]$_2$ did he$_1$ claim you were engaged t_2?

c. Lakoff (1976: 278):

$\not\subset$[Near John$_1$]$_2$, he$_1$ saw a snake t_2.

Just as Koster (1987 82) remarked about his example, nothing suggests that the anaphoric violation in the non-NP extraction case (ib) differs from the strong effect in the NP case (ia). Moreover, the page on which (ib) appeared contained generalization (ii).

(ii) Postal (1971: 157)

"in every case crossing restrictions are unaffected by whether or not a preposition travels with its following NP under the operation of either WH-Q movement or WH-Rel movement.."

So Chomsky's original Principle C account failed to take seriously the previously known data base.

5 See Chomsky, 1981: 197): "these examples provide *prima facie* evidence that the binding theory applies at S-structure,..."

6 As a second aside, one sees that the original Principle C proposal had in effect been refuted (via the secondary strong efffect) before it was made.

7 Examples like (21) are explicitly rejected in Jacobson (1976: 5).

8 A revised judgment about (21) is supported by a explicit remarks of a number of linguists who cite cases like (21) as well-formed:

(i) Some Writers Accepting Sentences Similar to (21)

a. Williams (1986: 288), Lasnik and Uriargereka (1988: 157).

b. Kuno (1987: 81) claims that many speakers consider (c) acceptable:

c. Bill$_1$ thinks that Mary is in love with Tom, and Jane is ... ⊂Him$_1$, he$_1$ thinks Martha is in love with t$_1$.

d. Pollard and Sag (1994: 247) cite e. = their {6.23a}

e. [Senator Dole]$_1$ doubted that the party delegates would endorse his wife.

⊂But HIM$_1$ he$_1$ was sure they would support t$_1$.

f. Barss (1986: 275):

(ii) It's him who$_1$ John$_1$ said Mary loves t$_1$ with all her heart.

(iii) Him$_1$, John$_1$ said Mary loves t$_1$ with all her heart.

9 Works by Chomsky discussing and making proposals about the strong crossover effect but which ignore the asymmetry property include Chomsky (1975a: 98-101; 1977a: 194-195; 1977b: 83; 1981:183f, 193f, 278-9; 1982a: 20, 23; 1986a: 78, 109, 182, 207n; 1995a: 71-72).

10 So, as a third aside about seriousness, over a considerable period, Chomsky and followers assumed an account of the strong effect already refuted by unchallenged data prominent in the original work on the phenomenon, data taken in Postal (1971) to require distinguishing extracted antecedents from extracted pronominal forms.

11 Chomsky's discussion is criticized in Kuno (1987: 61-64). Chomsky's feature D here and its use parallels almost entirely the Doom feature of Postal (1970: 486-493). But the latter is not referenced.

12 There is another type of case of the strong crossover effect which no Principle C/trace account (nor any other to my knowledge) has ever been shown to properly analyze, illustrated by (ib):

(i)a. It was [[his$_1$] mother]$_2$ that$_2$ I told him$_1$ that I had praised.

b. ⊄It was [his$_1$] holiness/honor/majesty] that I told him$_1$ that I had praised.

Despite the superficial similarity between the possessive structures of (ib) and the more standard structure in (ia), only the former manifests a strong effect. Despite its superficial possessive form, a phrase like <u>his magesty</u> behaves in terms of a Principle C account of the strong effect like a referring expression, moreover one with the same index as its initial possessive form DP. My suggestion is that cases like (ib) fall under the discussion of *camouflage* phenomena in Johnson and Postal (1980: 620-621). The analysis there permits an underlying non-possessor DP to take on the status of a possessor DP of a denotationally empty larger DP. To make such an analysis yield the strong effect, the latter would have to be characterized in such a way as to reference in cases like (ib) the status of the possessor DP independently of the camouflage phenomena.

13 The resumptive pronoun-linked account of a subset of extractions appealed to in the text here is strongly criticized in the context of a review of Postal (1998) by Levine (2001). While some of Levine's observations are surely valid, I disagree with his overall negative conclusion about the matter. But this is not the place where that disagreement can be discussed.

14 I expand and refine this view in Postal (2001a). As in the remarks of the previous footnote, Levine (2001) also strongly criticizes the claims about the pronominal properties of nominal P-gaps.

15 I also find the anaphoric linkages in the following examples unexceptionable:

(i) ⊂Your insulting Bob$_1$, I never discussed her reaction to with him$_1$.

(ii) ⊂Which claim that some senator$_1$ groped some intern$_2$ did that senator$_1$/that intern$_2$ confirm?

16 It is of some historical note that claim (4) does not reference Postal (1971) but rather Wasow (1972), published as Wasow (1979), which adds little or nothing to the data base in Postal (1971) a propos of the strong effect. There is in fact, to my knowledge, nothing which would support a conclusion that Chomsky ever consulted Postal (1971).