Remarks on Weak Crossover Effects

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1 Background

Lasnik and Stowell (1991) (hereafter: LS) make important suggestions about the factors determining the weak crossover (hereafter: WCO) effect. According to LS, a widely accepted descriptive generalization concerning this effect is (1) (= LS’s (14)).

(1) In a configuration where a pronoun P and a trace T are both bound by a quantifier Q, T must c-command P.

LS make two major points. The first is factual. They claim both that (1) is too general and that a correct limitation has to do with the character of the extracted phrase. They come to essentially the following conclusion:

(2) The WCO effect arises only when the Q of (1) represents semantically a “true quantifier phrase.”

This generalization is based on a distinction between two classes of extractions. In one type, including those in questions and restrictive relatives, LS’s data show that the WCO effect appears.1 In the other, including topicalization, object raising, parasitic gap extractions, and nonrestrictive relatives, their data indicate that the WCO effect is absent.2

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2 The observation that English nonrestrictive relatives fail to yield WCO effects was made earlier by Safir (1984:608, 1985:288, 1986:667) and Kuno (1988:241). Contrary but I now think mistaken judgments occur in...
Material supporting these generalizations is found in (3).³

(3) a. *Who₁ did his₁ sister call t₁ a moron?
b. *the kid₁ who₁ his₁ sister called t₁ a moron
c. Frank₁, his₁ sister called t₁ a moron.
d. Frank₁ was easy for his₁ sister to outshine t₁.
e. Who₁ did they convince t₁ that his₁ sister had called pg₁ a moron?
f. John₁, who₁ they convinced his₁ sister that you had called t₁ a moron, . . .

LS propose to account for such contrasts by appeal to the proposal that the extracted element in (3a–b), for example, is a “true quantifier phrase”—that is, a phrase containing an element that semantically quantifies over a set with ≥ 2 members.⁴ They argue plausibly that the extracted phrases in (3c–f) do not contain such quantifiers.

LS’s second major point is that the distribution just cited can be explained by a partially novel characterization of the empty categories (traces) associated with extractions in Government-Binding (GB) terms. Where standard GB regards all traces of movement to nonargument positions as variables, LS propose that there are two possibilities, depending precisely on the characterization of Q relevant for the generalization about the WCO effect. Roughly, they make the following claim (4):⁵

(4) a. If an extracted element is a “true quantifier phrase,” its trace is, as in past work, a variable.
b. If an extracted element is not a “true quantifier phrase,” its trace is a null “referring expression” (null “epithet”).

I argue here that although LS’s account contains a core of insight, it fundamentally oversimplifies the nature of the WCO effect. Because of this, LS’s proposed explanatory account can, as such, not stand. I argue for five points. First, I show how two descriptive

³ Postal 1973:103. The observation that English topicalizations can fail to yield WCO effects was made by Guéron (1986:62), whose example was (i).

(i) John₁, his₁ mother likes t₁.

In apparent conflict with the claimed well-formedness of (i), (ii) was cited as ungrammatical in Postal 1971:165.

(ii) *Jack₁, his₁ proposal about garbage removal enriched t₁.

I still do not like (ii) very much, but (iii) seems acceptable.

(iii) Jack₁, I am sure that his₁ proposal about garbage removal is going to enrich t₁.

Evidently, the basis of these judgments is obscure.

⁴ LS’s characterization of “true quantifier phrase” suffers minimally from a minor infelicity. Although their intention is to reference sets with more than one member, they sometimes pick out such collections via the phrase nonsingleton set, whose denotation includes the null set.

⁵ I restrict attention to traces posited in the original extraction positions, that is, in GB terms, the argument positions.
errors made by LS have arguably prevented them from giving considerably stronger English-internal support for (2) than they do. Second, I argue that the distinction LS make among English configurations satisfying (2) as to whether they induce the WCO effect correlates closely with a distinction as to whether certain English configurations induce one aspect of what has been considered the strong crossover (hereafter: SCO) effect. This fact argues against the specific theoretical proposal LS make to explain the correlation they have uncovered. Certain richer categorizations of the contexts inducing membership of traces in the category of null “referring expressions” are not thereby excluded. But LS’s account is damaged when it is argued, third, that the claim that topologicalization, clefting, and nonrestrictive relative extractions systematically fail to induce WCO effects is partially wrong. This generalization is shown to hold only of certain contexts. Fourth, I document a class of English cases where WCO effects are systematically absent in configurations where LS’s proposal (more generally, (1)) would seem to claim they should be found, that is, in contexts exemplifying (2) where Q is a “true quantifier phrase.” Fifth, I show that French WCO effect data threaten a universal interpretation of generalization (2) but then propose a speculative hypothesis that could avoid the necessity of regarding (2) as language-particular. The relevant French facts are partially parallel to certain data from languages other than English cited by Georgopoulos (1991). In these languages WCO effects appear to be absent, even in cases where LS’s account as well as certain previous ones would predict them to be present.

2 Topicalization and Clefting of Quantificational Phrases

LS’s description recognizes a correlation between English construction types and the characterization of the Q in (1) as a “true quantifier phrase.” In question and restrictive relative constructions, Q is a “true quantifier phrase.” In topicalization, object raising, cleft, and restrictive relative constructions, it is not. Part of this correlation is theoretically supported by two explicit claims. LS state that “wh-phrases and other QPs do not occur as Topics” (p. 697). And they claim that “QPs are generally impossible as satellite constituents in clefts” (p. 716). LS give no data in support of these assertions, but one can assume they are based on facts like those in (5).

(5) a. *Everyone/Somebodyt1, I talked to t1.
   b. *It was everybody/someonet1 that I talked to t1.6
   c. *Some giraffet1, they chased t1 for an hour.
   d. *Every proposalt1, the director refused to consider t1.

However, despite (5), both of LS’s claims are incorrect, as seen in (6).

(6) a. Anyone1 else/but Bob/other than her, they would have fired t1.
   b. It was somebody1 else/other than her that they fired t1.

6 Example (5b) is, of course, irrelevantly well formed on a reading where it is not a cleft.
For some reason that need not concern us, quantificational phrases are blocked in topicalizations and cleftings only when they are "simple." Addition of exceptional phrases like those in (6), relative clauses like those in (7), or adjective phrases like those in (8) yields grammatical results.

(7) a. Anyone₁ who was sick, they would have fired t₁.
    b. It was somebody₁ who was sick that they fired t₁.

(8) a. Anyone₁ less popular, they would have fired t₁.
    b. It was somebody₁ taller and thinner than you that they wanted to hire t₁.

I take it as uncontroversial that phrases like anyone else and somebody who was sick qualify as "true quantifier phrases" in LS’s sense. Their proposal about the necessary conditions for the WCO effect then predicts that topicalization and clefting of such phrases should, with respect to inducing WCO effects, behave like questioning and restrictive relative extraction and not like nonrestrictive relative extraction, object raising, and parasitic gap extraction or like topicalization and clefting of "referential" NPs. And, as far as I can tell, this is entirely correct:

(9) a. Jack₁, I told his₁ wife that I had called t₁.
    b. Everybody₁ else, I told his₂ wife that I had called t₁.
    c. *Everybody₁ else, I told his₁ wife that I had called t₁.

(10) a. It was Jack₁ that I thought she described his₁ wife to t₁.
    b. It was somebody₁ else that I thought she described his₁ wife to t₁.
    c. *It was somebody₁ else that I thought she described his₁ wife to t₁.

The data in (9) and (10) show that correcting the descriptive errors concerning the types of NPs that can be extracted under topicalization and clefting permits a major expansion of the support for LS’s claim (2). Moreover, one sees that it is not possible to say something like "questioning induces WCO effects but topicalization does not." But such a statement is not implied by LS’s actual proposal, only by the apparent correlations found in their data and reinforced by their misdescriptions of topicalization and clefting. That is, the distribution of the WCO effect is inherently linked not to construction types but to types of NPs extracted, regardless of construction, and this is essentially what LS have argued. LS’s claim (2) thus seems to be even better grounded than their discussion shows.

3 Correlations with the Strong Crossover Effect

LS’s (2) exclusively concerns the WCO effect. Turning now to the SCO effect, I distinguish two varieties, illustrated in (11a–b).

(11) a. *Who₁ did they inform him₁ that Joan would call t₁?
    b. *[Whose₁ sister]₂ did they inform him₁ that Joan would call t₂?
I refer to an SCO configuration like (11a) as manifesting the primary SCO effect, about which I will have nothing further to say here (see Postal, in preparation), and to one like (11b) as manifesting the secondary SCO effect. The difference is that in (11a) it is the linkage of the entire extracted phrase with the pronoun that is blocked, whereas in (11b) it is an NP embedded in the extracted phrase that cannot be linked to the pronoun.

Consider a basic observation about English secondary SCO effects, stated in (12). 7

(12) In a potential secondary SCO configuration of the form

\[ \ldots \left[ \text{NP}_1 \right] \ldots \] \text{NP}_2 \ldots \text{pronoun}_1 \ldots \text{E} \]

where \text{NP}_2 is the extracted phrase, and \text{E} the extraction site, the secondary SCO effect exists only if \text{NP}_1 meets the condition specified by LS’s claim (2) as necessary for inducing the WCO effect. 8

To support (12), observe first that no secondary SCO effect is induced in nonrestrictive relatives, topicalizations of “referential” NPs, cleftings of “referential” NPs, parasitic gap constructions, or object raising structures: 9

(13) a. Jerome, \[\text{whose}_{1} \text{ sister}_{2}\] I informed \text{him}_{1} you were waiting for \text{t}_{2}, \ldots

    b. \[\text{Jerome}_{1}'s \text{ sister}_{2}\], I informed \text{him}_{1} you were waiting for \text{t}_{2}.

    c. It was \[\text{Jerome}_{1}'s \text{ sister}_{2}\] that I informed \text{him}_{1} you were waiting for \text{t}_{2}.

    d. \[\text{Which man}_{1}'s \text{ sister}_{2}\] did you insult \text{t}_{2} after informing \text{him}_{1} that you were going to fire \text{t}_{2}?

    e. \[\text{Jerome}_{1}'s \text{ sister}_{2}\] will be difficult to inform \text{him}_{1} that they are going to fire \text{t}_{2}.

7  If something like (12) is correct, then secondary SCO effect would be a misnomer, since this effect would presumably then be linked to the WCO effect rather than to the primary SCO effect.

8  This is in part not really a new observation. For example, Van Riemsdijk and Williams (1981:202) state that “the ability of wh-movement to change coreference conditions is strictly limited to definite anaphora—it cannot change the ability of a quantified NP to bind a pronoun.” In my terms, this is a comment about the secondary SCO effect. Their example was (i).

    (i) *Whose picture of Bob/*everyone, does he1 like?

They thus observed that the secondary SCO effect existed only when the analog of \text{NP}_1 in (12) was, in LS’s terms, a “true quantifier phrase.”

9  Although (13a–e) are, for me, grammatical, they are hardly very natural. In particular, they are not as good as the alternatives; for example, (13b) is inferior to (i).

    (i) Jerome, I informed \text{t}_{1} that you were waiting for his1 sister.

Incidentally, it is important not to confuse the claim made in the text about, say, (13c) with the (only) apparently contradictory claim made by Higginbotham (1980:705) that “it turns out that they [clefts: PMP] exhibit the pattern of restrictives rather than nonrestrictives.” For Higginbotham’s remark references not cases like (13c) but those like (ii).

    (ii) *It was Jerome, \[\text{whose}_{1} \text{ sister}_{2}\] I informed \text{him}_{1} you were waiting for \text{t}_{2}.

That is, his comment references the extraction internal to the contained clause, not that involving the clefted phrase.
Second, a secondary SCO effect appears in questions and restrictive relatives:

(14) a. *[Which man’s1 sister]2 did you inform him1 that they were going to fire t2?
   b. *the man1 [whose1 sister]2 you informed him1 that they were going to fire t2

Third, a secondary SCO effect exists in the same kind of topicalizations and cleftings that yield WCO effects, those in which NP1 in (12) is a “true quantifier phrase”:

(15) a. *[Somebody1 else’s sister]2, I informed him1 you were waiting for t2.
   b. *It was [somebody1 else’s sister]2 that I informed him1 you were waiting for t2.
   c. *[Some other guy’s1 sister]2, I informed him1 you were waiting for t2.
   d. *It was [some other guy’s1 sister]2 that I informed him1 you were waiting for t2.

Fourth and finally, negative NP extraction, not discussed by LS, which surely involves an extracted NP qualifying as a “true quantifier phrase” in their sense, induces both WCO and corresponding secondary SCO effects:

(16) a. *Nobody1 (else) did I inform his1 sister that they were going to fire t1.
   b. *[Nobody1 (else)’s sister]2 did I inform him1 that they were going to fire t2.

Let us assume then that a correlation between the distributions of WCO and secondary SCO effects linked to the “true quantifier phrase” property is both real and nonaccidental. This raises a problem for LS’s proposal to account for the WCO facts via their novel view about traces. Recall that their suggestion appeals to a new category of trace representing “null epithets,” contrasting with traces that are “variables.” Let us represent the former as ne and the latter as v. Then LS’s claim is that extraction of “true quantifier phrases” yields traces of the v variety, whereas extraction of non—“true quantifier phrases” yields those of the ne type. Hence, the contrasting (9a) and (9c) would have respective contrasting structures like (17a) and (17b).

(17) a. Jack1, I told his1 wife that I had called ne1.
   b. *Everybody1 else, I told his1 wife that I had called v1.

But we have seen that the goodness/badness of the WCO effect cases in (17) correlates with that of the secondary SCO effect cases in (18).

(18) a. [Jack’s1 wife]2, I told him1 that I had called t2.
   b. *[Everybody1 else’s wife]2, I told him1 that I had called t2.

If what is wrong with (17b) is a function of the presence of a v bound by an extractee that is a “true quantifier phrase,” then the correlations that have been attested would suggest that (18b) is bad for the same reason. Hence, t in (18b) would have to be a v. But under the ordinary GB understanding of the binding of traces, that v is bound not
by the ‘‘true quantifier phrase’’ _everybody else’s_, but by the whole extracted NP. If that is to be regarded as a ‘‘true quantifier phrase,’’ then the defining property of these phrases must somehow be characterized in such a way as to be projected from lexical quantifiers to (obviously only certain) larger phrases that contain them. This goes far beyond the rather elementary characterization of _ν_ proposed by LS (pp. 710–711).

The correlation between WCO and secondary SCO effects suggests that there must, in LS’s terms, be some kind of functional assignment of phrases to a certain category corresponding to what they call ‘‘true quantifier phrases’’ on the basis of the membership of _certain_ subconstituents of those phrases in that category. In particular, then, it might be possible to provide a viable definition of ‘‘true quantifier phrase’’ that would assign (for example) _someone else’s sister_ to that category on the basis of the fact that _someone else’s_ belongs to it but would not assign _John’s sister_ to it given that _John_ does not belong to it.11

Other evidence suggests that certain phrases having preposed genitive immediate constituents behave in certain respects like those preposed genitives. Ortiz de Urbina (1990:195) observes, for example, that a negative preposed genitive determines that the whole phrase behaves like a negative with respect to ‘‘licensing’’ negative polarity items:

(19) a. *Anybody didn’t see him.
   b. He didn’t see anybody.
   c. Nobody saw any professor.
   d. *Any professor was seen by nobody.
   e. Nobody’s mother saw any professor.
   f. Nobody’s mother’s (friends’ (neighbors)) liked any professor.

Examples (19a–d) motivate a condition requiring the negative to c-command the polarity item. But this condition is not satisfied in the nonetheless grammatical (19e), in which the subject _nobody’s mother_ behaves with respect to polarity induction as if it were

10 One might question whether that distinction is independently tenable since it takes no account of the apparent fact that extracted PPs induce or not the WCO effect if and only if their head NP would do so:

   (i) a. *Who$_1$ did his$_1$ son refuse to work for _t$_1$?
      b. *For whom$_1$ did his$_1$ son refuse to work for _t$_1$?
      c. Jerome$_1$, his$_1$ son refused to work for _t$_1$.
      d. For Jerome$_1$, his$_1$ son refused to work _t$_1$.

LS’s account says only (p. 709) that the trace of a non–‘‘true quantifier phrase’’ is not a variable (but an epithet). But neither of the extractees in (ib,d) is a ‘‘true quantifier phrase’’; rather, they are PPs containing ‘‘true quantifier phrases’’ as subconstituents. So, taken literally, LS’s proposal would yield null epithet traces in all of these, wrongly predicting that (ib) involves no WCO effect.

It seems then that LS’s account must, minimally, be refined to somehow project the relevant property from a PP head constituent to the dominating phrase itself. Perhaps the effect of this can be achieved in their terms without special stipulation via a claim about the way that S-Structure relates to LF—for example, by principles that in effect replace extracted PPs by their immediately contained NPs at LF.

11 This discussion should surely be related to the ones in Jacobson 1977 and Higginbotham 1983. I refer to the principles that Higginbotham (p. 412) sums up as saying ‘‘a pronoun that is considered as merely dependent upon a variable obeys the same principles of crossover that it would if considered as having that variable for its antecedent.’’
nobody. Example (19f) shows that the kind of “projection” at issue is recursive. There is, I think, a strict analogy between the behavior of negatives in (19) and that of “true quantifier phrases” in, say, (18b). But it remains to develop a precise account of this parallelism.

4 Induction of Weak Crossover Effects without “True Quantifier Phrases”

LS’s suggestion that the WCO effect is linked to the status of extracted elements as “true quantifier phrases” is based on the observation that in cases involving (for example) topicalization, clefting, parasitic gaps, object raising, and nonrestrictive relatives, an absence of WCO effects correlates with the plausibility of the claim that the extracted elements in these cases are not “true quantifier phrases.” However, the fundamental assumption of LS’s proposal is undercut by the observation that the generalization just cited is not true. In certain circumstances, extractions under at least topicalization, clefting, and nonrestrictive relative clause formation do yield WCO effects, even when, in contrast to the situation documented in section 2, the extracted phrases are not in any sense characterizable as “true quantifier phrases.” At issue are instances of these phenomena where the extracted phrases are “referential expressions.”

Such cases are already cited in the literature. For instance:

(20) a. *Harry1, a picture of him1 fell on t1.
   b. *Harry1, I am quite sure that a picture of him1 fell on t1.
   c. *De Gaulle1, that description of him1 annoyed t1 more than you know.

((20a–b) and (20c) are from Postal 1971:167, 188, respectively.) These contrast with unextracted correspondents:

(21) a. (I am quite sure that) a picture of him1 fell on Harry1.
   b. That description of him1 annoyed de Gaulle1 more than you know.

Example (20b) shows, in connection with the remarks of footnote 2, that greater separation of the antecedent and pronoun does not help in these cases. Consider also (22a–c).

(22) a. *Carl1, I found that Mary’s picture of him1 had caused t1 to be fired.
   b. *It was Carl1 who1 I found that Mary’s picture of him1 had caused t1 to be fired.
   c. *Carl1, who1 I found that Mary’s picture of him1 had caused t1 to be fired, . . .

Similar facts seem to obtain for object-raising and parasitic gap constructions:

(23) a. *Carl1 will be difficult to prove that Mary’s picture of him1 enraged t1.
   b. *It was Carl1 that they medicated t1 after proving Mary’s picture of him1 to have enraged pg1.
If one has doubts about the judgments of ungrammaticality in (22) and (23), it is useful to suppress the pronoun in each example. This yields well-formed examples having subject-contained parasitic gaps. Their sharp contrast with the correspondents in (22) and (23) justifies the claim that the latter are ungrammatical. Similarly, it is helpful to consider parallels of (22) and (23) involving extracted prepositional phrases (PPs), where the facts seem somewhat clearer, supporting the existence of the phenomenon:

(24) a. *To Carl₁, I found that Mary’s picture of him₁ had forced them to write t₁.
    b. *It was to Carl₁ that I found that Mary’s picture of him₁ had forced them
       to write t₁.
    c. *Carl₁, to whom₁ I found that Mary’s picture of him₁ had forced them to
       write t₁, . . .

This second test is of course not applicable to the object-raising or parasitic gap cases, which cannot involve PP extraction.

The data just presented might appear to leave the description of the WCO effect in chaos.¹² But although there are evidently significant complications, certain patterns appear, at least for English. LS’s work suggests that the WCO effect is linked (among other things) to the character of the extracted phrase. Data like (20)–(24) indicate that it is also linked to the character of the phrases containing the pronoun with which linkage is potentially blocked. Consider an essentially minimal contrast like (25).

(25) a. Sidney₁, I am sure [his₁ job/mother/beard] is important to t₁.
    b. *Sidney₁, I am sure [your carving/description/opinion of him₁] is important
       to t₁.

I suggest that the difference between (25a) and (25b) is a function of differences between the bracketed NPs, differences at least linked to semantic properties. Most clearly, the bracketed phrases in (25b) are “scope islands,” whereas those in (25a) are not. A quantifier in the former can only have a scope internal to the phrase; a quantifier in the latter can have a scope including elements external to the phrase. Compare (26a) and (26b).

(26) a. I am sure nobody’s job/mother/beard is important to Sidney.
    b. *I am sure your carving/description/opinion of nobody is important to
       Sidney.

The contrast seems to correlate with the following facts. The structure nobody’s beard is important . . . can have a logical form like (27a); but, because of the “scope island” property, your carving of nobody is important cannot have a logical form like (27b).

(27) a. Not(∃x(x’s beard is important. . .))
    b. Not(∃x(your carving of x is important. . .))

¹² One could, of course, claim that cases like (20)–(24) are not WCO effects but some distinct phenomenon. In the absence of independent justification, however, such an approach could only deprive statements about the WCO effect of factual content.
These points are supported by even more minimal pairs like (28a–d).

(28) a. Your dismissal of Ted/*nobody was evil.
   b. *Ted1, who1 I am sure that your dismissal of him1 has driven t1 mad, . . .
   c. Ted’s/Nobody’s dismissal was evil.
   d. Ted1, who1 I am sure that his1 dismissal has driven t1 mad, . . .

Although the matter requires much further study, perhaps one can say something like (29) (for English; see section 6).

(29) Given the configuration in (1),
   a. Extracted “true quantifier phrases” yield WCO effects regardless of the type of phrase containing the pronoun.
   b. Extracted non-“true quantifier phrases” yield WCO effects only when the pronoun is in a “scope island” not containing the extraction site.  

Section 2 showed that English appears to manifest a strong correlation between the conditions for the WCO effect and those for the secondary SCO effect. One should ask then whether the corresponding secondary SCO effects are also sensitive to containing phrases. It seems that they are not. Compare (22) and (23), for example, with (30).

(30) a. [Mary’s picture of Carl1]2, I found that he1 really liked t2.
   b. It was [Mary’s picture of Carl1]2 that I found that he1 really liked t2.
   c. [Mary’s picture of Carl1]2, which2 I found that he1 really liked t2, . . .
   d. [Mary’s picture of Carl1]2 will be difficult to prove that he1 really liked t2.
   e. It was [Mary’s picture of Carl1]2 that they touched up t2 after proving him1 to have really liked pg2.

However, given (29), this need not be considered anomalous, for (29b) references a state of affairs in which a pronoun is internal to a “scope island,” which is, of course, not true of the pronouns in (30).

No doubt, even (29) is too simple, in ways not touched on in footnote 13; see below. But it appears to be rather more accurate than the straightforward treatment in LS’s proposal, which fails to take into account the character of the phrases containing the pronoun but not the extraction site. To the extent that something like (29) is right, LS’s proposal involving “null epithets” versus variables cannot be maintained. In their terms,

13 No doubt (29b) must be refined. How to do this depends on even more subtle facts. For instance, it must be determined whether cases like (ia–b) involve a WCO effect or not.

   (i) a. Jerome1, who1 I am sure that your dismissal of his1 mother has driven t1 mad, . . .
      b. Jerome1, I am sure that your dismissal of his1 mother has driven t1 mad.

I believe that no such effect is present. If so, then (29b) must be modified; perhaps it is only the minimal (non-PP) phrase containing the pronoun that is relevant. In (i) this would be the NP corresponding to his mother. The fact that the latter is not a “scope island” would then be determinative, even though it is inside the “scope island” defined by your dismissal of NP. These matters evidently require much further research.
an example like, say, (28b) would contain a “null epithet” as its trace and thus be predicted, wrongly, not to manifest any WCO effect.

5 Other Factors Relevant to the Weak Crossover Effect

Another set of factors distinct from anything mentioned so far seems to play a role in the determination of WCO effects. Alongside standard examples like (31a) there are contrasting cases like (31b–d).

(31) a. *Which lawyer₁ did his₁ clients hate t₁?
   b. Which lawyer₁ did even his₁ clients hate t₁?
   c. Which lawyer₁ did only his₁ older clients hate t₁?
   d. Which lawyer₁ did his₁ own clients hate t₁?

Like the facts cited in section 4, these contrasts are linked not to the status of the extracted phrase, which is a “true quantifier phrase” in all cases, but to that of the phrase containing the pronoun. The facts seem parallel for restrictive relatives:

(32) a. *the lawyer₁ who₁ his₁ clients hate t₁
   b. the lawyer₁ who₁ even his₁ clients hate t₁
   c. the lawyer₁ who₁ only his₁ older clients hate t₁
   d. the lawyer₁ who₁ his₁ own clients hate t₁

The data in section 4 revealed that even non-“true quantifier phrase” extraction can yield WCO effects, contrary to the predictions of LS’s system and many others. The data in (31) and (32) show that even “true quantifier phrase” extraction can fail to yield WCO effects, again contrary to the predictions of LS’s system and many others. Thus, the actual proposal that LS make is both too strong and too weak in different respects. Both sets of facts show that a viable account must reference not only the status of the extracted phrase but also that of phrases containing the pronoun. It would be desirable if the same principles appropriate for defining the notion “scope island” apparently relevant for the data in section 4 also handled (31) and (32). But it is anything but obvious that this is the case.¹⁴


   (i) a. *Which man₁ did his₁ children dislike t₁?
   b. *His₁ children dislike no/every man₁.

The idea is that given the movements relevant to the derivation of GB’s LF level, both (ia) and (ib) will involve violation of the WCO configuration. For instance, (ib) would have an LF representation essentially like (ii); see LS 1991:689.

   (ii) no man₁ [his₁ children dislike t₁]
6 Weak Crossover Effects in French

A problem for any account of the WCO effect and particularly for a universal interpretation of LS’s claim (2) is raised by facts of standard French. First, French restrictive relative clauses manifest sharp WCO effect contrasts with English restrictive relatives. Compare (33a) and (33b), which are paraphrases except that the French example permits a linkage between the relative pronoun and the definite pronoun embedded in the subject, which (at least my) English certainly does not permit.

(33) a. *the doctor₁ who(m)₁ his₁ wife introduced
to that charming nurse
b. le médecin₁ que sa₁ femme a présenté t₁
à cette infirmière charmante

The linkage in (33b) is especially remarkable in that French, unlike English, freely permits extraction of the relevant parts of subjects. One might then have expected to find (34), with the linkage between the relative pronoun and embedded pronoun, rather than (33b).

(34) *le médecin₁ dont₁ la femme t₁ l’₁ a présenté
the doctor of whom₁ the wife introduced him₁
à cette infirmière charmante
to that charming nurse

Although the word combination in (34) is well formed, an antecedent linkage between dont and l’ is impossible, for reasons that need not concern us.

The interactions between French relativization and pronominal linkage possibilities referenced here are traditionally noted (see, e.g., Martinon 1927:220, Grevisse 1969:492, Sandfeld 1965:191–192). Specifically, it is repeatedly indicated that correct French utilizes restrictive relative constructions that apparently violate the WCO configuration (2) instead of subject extraction of dont, which would avoid it. For example, Martinon (1927:220) notes that it is correct to say (35a) and not (35b).

(35) a. un homme₁ à qui₁ sa₁ jambe fait mal t₁
a man to whom₁ his₁ leg makes pain
‘a man whose leg hurts’

And this is obviously parallel to (ia). However, the parallelism between (ia) and (ib) breaks down when even or only is added:

(iii) a. Which man₁ did even/only his₁ children dislike t₁?
b. *Even/Only his₁ children dislike no/every man₁.

This argues that the similarity between (ia) and (ib) fails to represent a genuine generalization.

The same conclusion is supported in a different way by facts from French. As section 6 documents, French fails to manifest WCO effects in restrictive relative clauses, like (33b). The latter then forms a minimal contrast with, say, (iv).

(iv) *sa₁ femme n’a présenté aucun homme₁ à cette infirmière charmante.
his wife didn’t introduce any man to that charming nurse
b. *un homme dont la jambe lui fait mal
   a man whose the leg him makes pain
   ‘a man whose leg hurts’

And Grevisse (1969:492) specifies that it is correct to say (36a) and not (36b).

(36) a. les élèves à qui leur application a valu des succès
   the students to whom their industriousness brought successes
   (36b) *les élèves dont l’application leur a valu des succès
   the students whose industriousness them brought successes
   ‘the students whose industriousness brought them successes’

The existence of grammatical cases like (35a)/(36a) is also discussed by Milner (1982) and Godard-Schmitt (1986:244). The former cites (37) (p. 60).

(37) Un écrivain que son livre ne satisfait pas n’a plus qu’à recommencer.
   a writer that his book doesn’t satisfy has only to start over again

The grammaticality of a class of French restrictive relative clauses that do not induce the WCO effect raises clear difficulties for any account of this phenomenon and particularly for the claims linked to (2) that movement of “true quantifier phrases” leaves traces that are variables and that such movement yields WCO effects in the configuration (2). If such principles are to be interpreted universally, then examples like (35a) and (36a) must apparently (but see below) not have analyses in which the extracted NP is a “true quantifier phrase.” But LS explicitly claim (p. 707) that the wh-operator in a restrictive relative clause is a “true quantifier phrase” in the relevant sense. Although their remarks were based on English, how could this be true of English cases but not of their French paraphrase counterparts?15

Even were it claimed that à in (35a)/(36a) is a preposition defining a PP—a status that is sometimes denied (see Authier and Reed 1991:37)—this does nothing to account for the contrasts with English. There is no WCO effect contrast in (38).

(38) a. *a man, who1 his leg gave a lot of trouble to t1
   b. *a man, to whom1 his leg gave a lot of trouble t1

Hence, as in effect observed in footnote 10, for (2) to function properly for English, the property “true quantifier phrase” must be projected from an NP to a PP having that NP as head. Moreover, as cases like (33) and (37) show, the contrasts between English and French restrictive relative clauses are entirely independent of questions of PPs.

The lack of WCO effects in French restrictive relative clauses can apparently not

15 Given (31b–c) and (32b–c), one might claim that French restrictive relative clause cases, but not the corresponding English ones, involve invisible instances of forms meaning ‘even’ or ‘only’ associated with the pronouns. But, as far as I know, the semantic properties of the examples contraindicate such claims. That is, they are paraphrases of English examples without even or only.
be accounted for via assumptions associating special features with such clauses (as attempted in Chomsky 1982:93 for English). For a lack of WCO effects is also apparently characteristic of French questions, as in (39), although I am aware of no statements to this effect in the literature.\textsuperscript{16}

(39) a. Quel homme\textsubscript{1} crois-tu que sa\textsubscript{1} mère a appelé t\textsubscript{1}?

what man believe you that his mother called

‘What man do you think his mother called?’

b. A quel homme\textsubscript{1} crois-tu qu’ils ont présenté
to which man do you think that they introduced
sa\textsubscript{1} voisine t\textsubscript{1}?

his (female) neighbor

These observations about French restrictive relatives and questions might lead to the conclusion that there simply are no WCO effects in French. But that is not true. Not only does French have sentences manifesting such effects, but they are of the kind that support a principle like (2). For example, cleft structures exhibit exactly the pattern found in English. Clefting of “referential” phrases yields no WCO effect, but clefting of “true quantifier phrases” does:

(40) a. C’est Marcel\textsubscript{1} que sa\textsubscript{1} mère a appelé t\textsubscript{1}.
it is Marcel that his mother called

b. *C’est quelqu’un\textsubscript{1} d’autre que sa\textsubscript{1} mère a appelé t\textsubscript{1}.
it is someone else that his mother called

Hence, it would appear that the contrast uncovered by LS for English also exists in French. It then looks like a real paradox that French restrictive relative and question clauses contrast with English ones in behaving as if they did not, in LS’s terms, involve the extraction of “true quantifier phrases.”\textsuperscript{17}

To account for the documented English/French contrasts, it might appear necessary to abandon a claim that the syntactic property “true quantifier phrase” is universally fully determined by the \textit{semantic} status LS refer to. One might posit that in at least some cases, extractees that contain the appropriate type of semantic quantifier behave with

\textsuperscript{16} On the contrary, French restrictive relative and question clauses both manifest primary SCO effects exactly as in English:

(i) *le type\textsubscript{1} qu’il croit que j’ai présenté t\textsubscript{1} à Louise

the fellow that he thinks that I introduced to Louise

(ii) *Qui croit-il\textsubscript{1} que j’ai présenté t\textsubscript{1} à Louise?

who does he think that I introduced to Louise

\textsuperscript{17} These facts also seem relevant in a negative way to claims by Georgopoulos (1991) linking the WCO effect to typological differences between languages; for although English and French seem to clash sharply with respect to the WCO effect in restrictive relative clauses and questions, they would presumably not differ along the typological parameters considered relevant by Georgopoulos. The latter conclusion is, moreover, consistent with the fact that the two languages seem to behave alike with respect to the induction of WCO effects under clefting.
respective to WCO effect induction like elements that are not "true quantifier phrases"—that is, like "referential" expressions. Specifically, since with respect to WCO effects, French question forms and relative pronouns fail to behave like explicit quantifier phrases such as quelqu'un, (d'autre), one might propose that the former forms are not syntactically "true quantifier phrases." Such an approach would evidently greatly decrease the theoretical interest of a claim like (2). The question is whether there is any alternative.

One can speculate in very sketchy terms that there is. This depends on observations about WCO effects in Hebrew made by Sells (1984). The key points are that in (for example) Hebrew relative clauses, extraction can either be associated with a resumptive pronoun or not. WCO effects appear only in the cases where the resumptive pronoun is absent. ((41) is from Sells 1984:253.)

(41) a. *ha'iš še imo ohevet
    the man_t that his_t mother loves t

b. ha'iš še imo ohevet oto
    the man_t that his_t mother loves him_t

Here one finds internal to a single language a contrast similar to that found between French and English restrictive relatives. Moreover, Cinque (1990:151) observes with respect to the marginal occurrence of resumptive pronouns in (nonstandard) English that such pronouns also eliminate WCO effects. ((42) is from Cinque 1990:151.)

(42) the boy_t who_t we don't know whether his_t parents died after sending him_t to college . . .

These observations about the relation between resumptive pronouns and WCO effects raise the possibility of the following hypotheses:

(43) a. Regardless of the nature of the extracted element, WCO effects do not occur if the extraction site is filled by a resumptive pronoun.

b. The English/French contrasts devolve on the fact that English restrictive relatives and questions do not involve resumptive pronouns, whereas French ones do.\(^\text{18}\)

Hypotheses (43a–b) immediately regularize the French data, reducing the facts of French relatives and questions to the principles relevant for Hebrew relatives like (41b) and nonstandard English cases like (42). Abstractly, this evidently makes the resumptive pronoun hypothesis extremely attractive.

Despite that, positing resumptive pronouns in French relative and question clauses is fraught with serious problems, which I will certainly not be able to deal with here. Most obviously, some mechanisms must be posited to account for the fact that there

\(^{18}\) Unfortunately, the evidence presented by Perlmutter (1972) that French relative clauses involve resumptive pronouns is irrelevant to the claims in the text. As he himself notes (p. 89), all his French relative clause data involve nonrestrictive relatives.
are no visible resumptive pronouns in the relevant French cases. This is not a novel problem; Cinque (1990) posits a range of invisible resumptive pronouns in English, and Obenauer (1984, 1985, 1986) makes similar proposals for French. More seriously, resumptive pronouns like those in Hebrew (41b) and English (42) permit an extraction to successfully cross island boundaries (see Borre 1984:221). But, as is well known, the French relative and question clause extractions that are pertinent here are no less island-sensitive than their English correspondents. Similar problems are faced by Cinque (1990). Such issues can, I suspect, ultimately be resolved such that the resumptive pronoun posit for French is preserved. But until that is done in a serious way, the present suggestion remains highly speculative.

7 Conclusions

The basic conclusion of these remarks is, I believe, that WCO effects are even more mysterious than they might have seemed previously. Viewed from the perspective of English, LS’s principle (2) appears to represent a serious step forward. Section 2 showed that (2) is even better supported in English than LS’s text indicates, since it correctly predicts that topicalization and clefting of explicit quantifier phrases yield WCO effects. Parallel facts were later shown to hold for French.

But LS’s theoretical interpretation of (2) in terms of a contrast in assigning traces to the categories “variable” and “epithet” was seen to run into trouble. One problem is a correlation documented in section 3 between English WCO effects and secondary SCO effects, which has no obvious representation in such trace terms. A still deeper difficulty emerged in section 4, which showed that in cases of certain “scope islands,” (2) does not seem to be true. Certain English WCO effects are associated with the extraction of “referential expressions.” A different difficulty appeared in section 5, one relevant not so much to (2) as to the more widely accepted (1). It was shown that those contexts do not necessarily yield WCO effects even when “true quantifier phrases” are extracted, if the relevant pronouns are associated with even, only, or own.

Finally, data from French showed the overall WCO effect situation to be even more clouded. Basic restrictive relative and question clauses in French fail to yield WCO effects, even though there is as much reason to analyze their extracted elements as “true quantifier phrases” as for the corresponding English cases. This is true, even though the clefting of explicit French quantifier expressions does yield WCO effects, as (2) would suggest. It was speculated that the apparent paradox represented by the absence of WCO effects in French relatives and question clauses could be treated without de-

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19 Note the contrast between the topicalization case in (ia), where extraction is linked to a visible resumptive pronoun, and the restrictive relative in (ib).

(i) a. Marcel, je connais une femme qui l'adore.
   Marcel I know a woman who adores him

 b. *le type, que je connais une femme qui adore t
   the fellow who I know a woman who adores
priving (2) of much of its interest by subsuming the French cases under the independently motivated principle that extractions linked to resumptive pronouns do not induce such effects. But this view faces obvious difficulties and remains schematic.

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