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THE EPP AND THE SUBJECT
CONDITION UNDER SLUICING
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1 Introduction

The Extended Projection Principle (EPP), first formulated by Chomsky (1981), is a topic of continuing interest. On its original conception, the EPP requires that a clause have a subject. Chomsky (1995) later suggested instead that the EPP reduces to a strong feature of a functional head high in the clause structure, combined with a PF-based generalized pied-piping requirement. Most recently, Chomsky (2000, 2001a,b) has rejected feature-based movement in favor of a relation of long-distance agreement, Agree. On this conception, the EPP has nothing to do with feature checking in the sense of Chomsky (1995).

We are indebted to two anonymous *Linguistic Inquiry* reviewers for very helpful questions and suggestions. We should point out that, as is standard, the judgments reported are relative rather than absolute. In some cases, the contrasts are admittedly subtle, but the large majority of speakers we interviewed do report contrasts in the direction we indicate.

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Rather, in a return to Chomsky's (1981) earlier view, it is the requirement that certain functional heads must have a specifier.

In this squib, we provide evidence in favor of Chomsky's (2000, 2001a,b) and Lasnik's similar (2001a) approach to the EPP, by examining PP-extraction from the subject in the sluicing construction of English. We begin by reviewing Merchant's (2001) discussion of extraction from the subject in the merger type of sluicing construction. We then examine PP extraction out of the subject in the sprouting type of sluicing construction and discuss implications for the formulation of the EPP.

2 Subjects in Situ and Covert Phrasal A-Movement

As is well known, extraction is prohibited out of the subject of a passive or unaccusative verb as well as the subject of a transitive or unergative verb, as in (1a–b).

- (1) a. *Which Marx brother₁ did she say [a biography of t₁ {is going to be published/will appear} this year?
 b. *Which Marx brother₁ did she say that a biographer of t₁ {interviewed her/worked for her}?

As noted by Chung, Ladusaw, and McCloskey (1995) and Merchant (2001), however, IP-ellipsis under sluicing ameliorates violations of the Subject Condition, as in (2a–b).

- (2) a. A biography of one of the Marx brothers is going to be published this year—guess which (Marx brother).
 b. A biographer of one of the Marx brothers interviewed her, but I don't remember which (Marx brother).

Merchant (2001) suggests that the redemptive effects of sluicing in (2a–b) obtain because the “surviving” *wh*-phrases of the sluices in (2a–b) are extracted from within VP-internal positions as in (3a–b) rather than from within Spec,IP positions as in (4a–b).

- (3) a. which (Marx brother)₁ [_{IP} _____ is going to be published [a biography of t₁] this year]
 b. which (Marx brother)₁ [_{IP} _____ [[a biographer of t₁] interviewed her]]
 (4) a. which (Marx brother)₁ [_{IP} [a biography of t₁] is going to be published this year]
 b. which (Marx brother)₁ [_{IP} [a biographer of t₁] interviewed her]

The grammatical sluices (= the embedded question clauses) in (2a–b) are then assimilated to the corresponding grammatical examples in (5a–b), where *wh*-extraction is launched from within base positions of logical “subjects.” The latter examples contrast with the ungrammatical examples in (6a–b), where *wh*-extraction takes place from within derived Spec,IP positions.

- (5) a. Which candidate₁ were there [posters of t₁] all over town?
 b. Which candidate₁ did they say it was hard [to get t₁ to agree to a debate]?
- (6) a. *Which candidate₁ were [posters of t₁] all over town?
 b. *Which candidate₁ did they say [to get t₁ to agree to a debate] was hard?

This analysis has consequences for our discussion, as the EPP is apparently violated in (3a–b). This violation can, Merchant suggests, be overcome under a version of Chomsky's (1995:chap. 4) formulation of the EPP. Suppose that the EPP is instantiated by a strong D-feature in I, where *strong* means that the feature is uninterpretable at the PF interface and hence must be checked before Spell-Out. Normally, the feature is checked by overt movement to Spec,IP. However, when the offending feature is part of an elided constituent, the absence of the associated checking movement should not matter, as the strong feature has been deleted along with the rest of the IP and therefore does not reach the PF interface to cause a crash.

Merchant's analysis is appealing and is reminiscent of other instances of 'repair by ellipsis' discussed by Lasnik (2000, 2001a, 2002). However, his analysis raises some questions. First of all, the empirical basis for his analysis of the redemption effects bearing on the Subject Condition is the so-called merger type of sluicing construction, where the surviving *wh*-elements of sluices have corresponding antecedent phrases in the antecedent clauses. Chung, Ladusaw, and McCloskey (1995) argue that the presence of indefinite antecedent phrases in this construction plays a key role in bringing about the redemption effects. Fox and Lasnik (2003) also argue that the redemption effects in this construction follow from the interaction between the scope-taking operation of indefinite antecedent phrases and the deletion operation that wipes out island contexts. Furthermore, Merchant (2001: 162) claims that the subject island itself is a PF effect, which means that when it is elided at PF, its effects do not materialize. The analyses proposed in all three of these works imply that *wh*-extraction in the merger type of sluicing construction is possible from within subject phrases that have moved to Spec,IP as in (4a–b).

There is, in fact, evidence that the surviving *wh*-phrases of sluices like those in (2a–b) are launched from derived Spec,IP positions rather than from base positions of subjects. The following cases are representative:

- (7) a. [Every biography of one of the Marx brothers]₁ seemed to its₁ author to be definitive, but I don't remember (of which (Marx brother)).
 b. [Every investigator of one of these languages]₁ seems to his₁ supervisor to be brilliant, but I won't tell you which of the languages.

In Merchant's analysis, the sluices of (7a–b) are derived from the following structures:

- (8) a. (of) which (Marx brother)₂ [_____ seemed to its₁ author to be [every biography (of) t₂]₁ definitive]
 b. which of the languages [_____ seems to his₁ supervisor [every investigator of one of these languages]₁ to be brilliant]

Extraction of the surviving *wh*-phrases in (8a–b) should then violate Weak Crossover. Merchant addresses this problem by suggesting that phrasal A-movement takes place in covert syntax. However, this covert A-movement hypothesis incorrectly eliminates the contrast between (9a) and (9b), which Lasnik (2001b) constructs on the basis of Johnson's (1991) account of the *make out* construction.

- (9) a. The DA made every defendant₁ out to be guilty during his₁ trial.
 b. *The DA made out every defendant₁ to be guilty during his₁ trial.

In (9a), the embedded subject that has raised overtly to the matrix clause binds the pronominal within the matrix adjunct. In (9b), on the other hand, the embedded subject staying in the embedded Spec,IP position cannot bind the pronominal. The surface positions of the embedded subjects then account for the contrast between (9a) and (9b). It is not clear how to block the binding if covert phrasal A-movement is allowed.

3 The Sprouting Type of Sluicing Construction and the Position of Subjects

Given that subject phrases do move to Spec,IP before feeding *wh*-extraction out of them, the redemption effects in these examples must be accounted for in the same way as the same effects that arise when other types of islands are elided in the merger type of sluicing construction. In this section, we show that the sprouting type of sluicing construction provides a more informative test case for where subjects are located when extraction occurs out of them. In particular, we will note that in this construction, PP-extraction is possible out of subjects, and that those subjects are raised to Spec,IP positions.

As noted by Chung, Ladusaw, and McCloskey (1995), one of the remarkable features of the sprouting type of sluicing construction, in contrast to the merger type, is that extraction of surviving *wh*-elements in the former obeys island constraints. The contrast between (10) and (11) illustrates this.

- (10) a. *Agnes wondered how John managed to cook, but it's not clear what food. (*Wh*-Island Constraint)
 b. *Tony sent Mo a picture that he painted, but it's not clear with what. (Complex NP Constraint)

- (11) a. Agnes wondered how John managed to cook a certain food, but it's not clear what food.
 b. Tony sent Mo a picture that he painted with a certain kind of brush, but it's not clear with what kind of brush.

Bearing this in mind, let us now examine situations where the Subject Condition is not in force in sprouting constructions. As noted by Huang (1982), Chomsky (1986), and Culicover and Rochemont (1992), complement PPs can be extracted from DPs, but adjunct PPs cannot be.

- (12) a. Of whom₁ did you read [a biography t₁]?
 b. Of whom₁ did you buy [a picture t₁]?
 (13) a. *On which table₁ did you read [books t₁]?
 b. *From which city₁ did you meet [men t₁]?

Note now that corresponding sprouting-type sluicing cases show complement versus adjunct asymmetry.

- (14) a. John read a biography. I wonder of whom.
 b. John bought pictures, but I don't know of whom.
 (15) a. *John read books, but I don't know on which table.
 b. *John met men, but I don't know from which city.

This is what Chung, Ladusaw, and McCloskey claim: *wh*-movement under the sprouting type of sluicing patterns together with regular *wh*-movement.

In contrast to their extraction out of object positions, complement PPs cannot be extracted out of subjects.

- (16) a. ?*Of whom₁ were [pictures t₁] taken by Mary yesterday?
 b. ?*Of whom₁ was [a biography t₁] published by Abby?
 c. ?*To which room₁ was [a key t₁] found by John?

However, these Subject Condition violations seem to be repaired even in sprouting-type sluicing cases.

- (17) a. Pictures were taken by Mary, but I don't know of whom.
 b. A biography was published by Abby. I wonder of whom.
 c. A key was found on the table, but I don't remember to which room.

Furthermore, extraction of complement PPs is also possible from the subject position of a transitive or unergative verb.

- (18) a. Three students were here, but I don't remember of which field.
 b. A mayor just stepped down, but I don't know of which city.
 c. Pictures decorated the room, but I don't know of whom.

Unlike complement PPs, adjunct PPs cannot be extracted out of subjects in sprouting-type sluicing.

- (19) a. *Books were sold to John, but I don't know on which shelf.
 b. *Three men met John, but I don't know from which city.

The absence of the redemption effects in (19) as well as in (15) confirms that *wh*-extraction within the sprouting-type sluicing construction patterns together with regular *wh*-movement. Furthermore, it implies that ellipsis itself does not repair violations that result from extracting adjunct PPs out of DPs.

The remaining question is why the redemption effects obtain for complement PPs when they are extracted from apparent subject positions in the sluicing construction. One possible analysis for these effects will be that surviving complement PPs can be launched from VP-internal base positions of subject phrases in this sprouting-type sluicing construction, as suggested by Merchant (2001) for the merger-type counterpart. That is, it might be supposed that the sluices of (17a) and (18a) are derived from (20a) and (21a) rather than from (20b) and (21b), respectively.

- (20) a. of whom_i [_____ were taken [pictures t_i] by Mary]
 b. of whom_i [[pictures t_i] were taken by Mary]
 (21) a. of which field_i [_____ [[three students t_i] were here]]
 b. of which field_i [[three students t_i] were here]

Height diagnostics of the sort discussed above indicate that this line of analysis cannot be maintained. For instance, there is a c-command restriction on binominal *each*, as explored in detail by Safir and Stowell (1987). This is responsible for the contrast between (22a) and (22b–d).

- (22) a. John proved three chapters to have been plagiarized with one convincing example each.
 b. ?*John proved that three chapters were plagiarized with one convincing example each.
 c. ?*John proved there to have been three chapters plagiarized with one convincing example each.
 d. ?*There were proven to have been three chapters plagiarized with one convincing example each.

In (22a), the ECM (exceptional Case-marking) subject has raised overtly, as argued by Lasnik and Saito (1991) and Lasnik (1999, 2001b), with the result that it c-commands and licenses the binominal *each* in the matrix clause. In (22b), however, the non-ECM subject staying in the finite embedded clause fails to do so. Similarly for the associate of *there* in (22c–d).

Thus, if *wh*-movement takes place from an unraised phrase, it is predicted that the latter cannot license binominal *each* in the matrix clause, given that we have already established that there is no covert A-movement. The relative acceptability of (23) indicates that this prediction is not fulfilled.

- (23) Three chapters were proven to be mistaken with one convincing example each, but I can't remember of which book.

It then follows that the surviving complement PP *of which book* has moved out of the raised subject.

In a parallel fashion, anaphor binding can also be used to establish the height of subject phrases that complement PPs move from. The contrast between (24a) and (24b) shows a finite versus nonfinite asymmetry in terms of anaphor binding, as noted by Lasnik and Saito (1991) and Lasnik (1999, 2001b). In the former example but not the latter, the embedded subject has raised overtly, with the result that it licenses the reciprocal in the matrix clause. Similarly, as observed by Den Dikken (1995) and exemplified in (24c), when the associate of *there* is clearly in the lower clause, it cannot license an anaphor in the higher clause.

- (24) a. ?The detective asserted two students to have been at the demonstration during each other's hearings.
 b. ?*The detective asserted that two students were at the demonstration during each other's hearings.
 c. ?*There were asserted to have been two students at the demonstration during each other's hearings.

The reasonably acceptable status of (25) again indicates that the subject phrase has raised to the matrix subject position when the complement PP is extracted from it.

- (25) ?Two students were proven to be wrong during each other's oral exams, but I don't know of which field.

On the other hand, an *LI* reviewer suggests that these binding relations might only indicate that subjects in sluicing contexts move to Spec,VP or VP-adjoined positions, rather than all the way to Spec,IP. However, certain Neg-QP interactions indicate that raising indeed moves the subject to the higher position. Note first that a subject QP that contains *many* only takes wide scope over clausal negation, as in (26). The same QP in the associate NP position only takes narrow scope below negation, as in (27).

- (26) Many people weren't at the meeting. (unambiguous, Q>Neg)
 (27) There weren't many people at the meeting. (unambiguous, Neg>Q)

Now consider similar examples involving sluicing, where negation interacts with the subject QPs out of which *wh*-extraction takes place.

- (28) Many pictures weren't displayed at the exhibit, but I don't know of whom.
 (29) Many chapters weren't proven to be mistaken. I will now tell you of which book.

With respect to scope, these behave like (26), and not (27), indicating

that (31), rather than (30), is the correct representation. Thus, raising must have elevated the subject all the way to Spec,IP.

- (30) Many pictures weren't displayed at the exhibit, but I don't know [of whom]₁ [_{IP} _____ weren't [_{many pictures} t_1]₂ displayed t_2 at the exhibit].
- (31) Many pictures weren't displayed at the exhibit, but I don't know [of whom]₁ [_{IP} [_{many pictures} t_1]₂ weren't displayed t_2 at the exhibit].

We have now established that at least sometimes, subject phrases have raised to the usual subject position when complement PPs are extracted out of them. Presumably they raise to the subject position to satisfy the EPP. If, as Merchant (2001) argues, an offending strong feature is deleted as part of the IP deleted under sluicing, the movement of subject phrases to the surface subject position could be avoided. However, using the deletion option to meet the EPP is apparently not capitalized upon. This line of reasoning has as a consequence that the EPP is not a requirement of feature satisfaction, but a requirement that certain functional heads must have a specifier, as proposed by Chomsky (2000a, 2001a,b) and Lasnik (2001a). Furthermore, crucially, the EPP is an overt syntax requirement, in that subject phrases must have raised to the surface subject position before overt *wh*-movement takes place. Since the repair strategy resorting to deletion of an offending EPP-related strong feature has been shown to yield incorrect results, we now suggest that licit extraction of complement PPs out of subject phrases in the sluicing construction is due to direct avoidance of a violation of the Subject Condition when IP undergoes deletion. The crucial question that arises at this point is how the Subject Condition is instantiated. In the barriers framework (Chomsky 1986), a subject phrase is not L-marked and thereby constitutes a barrier. But under this sort of analysis, we would expect all island violations to be repaired under sprouting. But as shown by (10) and (32), they are not.

- (32) a. *John left after reading a biography, but I don't know of whom.
 b. *Mary got angry because her son bought pictures, but I don't know of whom.

In this regard, we agree with Chung, Ladusaw, and McCloskey that surviving *wh*-elements in sprouting cannot in general move out of islands.

As an alternative approach to the Subject Condition, we adopt the proposal that its effects follow directly from previous movement of the subject (Wexler and Culicover 1981, Lasnik and Saito 1992). Takahashi (1994) provides the basis for a principled account for this effect, relying on chain uniformity in Chomsky's (1995:91) sense. Assuming Shortest Move, Takahashi maintains that a *wh*-element extracted out of the subject first adjoins to it. Given that movement is a copying operation, the whole derivation then creates the configuration in (33).

- (33) *who does [_{IP}[_{DP} who [_{DP} a picture of who]] [_{VP}[_{DP} a picture of who] hang on the wall]]

Note that the problematic aspect of this representation is the A-chain ([_{DP} *who* [_{DP} *a picture of who*]], [_{DP} *a picture of who*]). In particular, the head of the A-chain is not uniform with its tail, in which case the chain results in a derivational crash.

Why should the nonuniformity of a chain lead to a derivational crash? Ochi (1999) suggests that the answer lies in PF considerations. At PF, chains created by movement are subject to deletion of all copies except the highest. If copies are nonidentical, deletion fails, and an illegitimate PF object results.

Ochi's PF analysis of chain uniformity is couched in the Attract framework. Now consider the derivation of (33) under this conception of movement. A feature of C attracts *who* from the subject phrase. Nothing forces it to adjoin to the subject itself. Rather, it moves to Spec,CP in one fell swoop, producing the following configuration:

- (34) *who does [_{IP}[_{DP} a picture of who]] [_{VP}[_{DP} a picture of who hang on the wall]]

This configuration is submitted to PF, where copies in a chain except the highest are deleted to achieve linearization. The relevant chains are (*who*, *who*) and ([*a picture of who*], [*a picture of who*]). Suppose that the first chain is processed first. Since the two members of this chain are identical, the lower copy of *who* is successfully deleted, resulting in the following configuration:

- (35) *who does [_{IP}[_{DP} a picture of ~~who~~]] [_{VP}[_{DP} a picture of who hang on the wall]]

Now the second chain enters processing. But at this point this chain is not uniform: the higher member is not identical to the lower. Consequently, the lower copy cannot be deleted, and an illegitimate PF object results. Thus, (33) is correctly ruled out.

This account demands that when the links formed by A-movement fail to be linearized, all the A-chain links count as the illegitimate structure. This claim is not implausible, given Chomsky's (1995) proposal that under Form Chain, successive-cyclic movement counts as one operation. Extending the conception of Form Chain to chain linearization at PF, it is reasonable to assume that failure to delete chain links under identity leads to the whole chain's being ill formed.¹

¹ Unlike complement PPs, however, adjunct PPs cannot be extracted out of subject positions (see (19a–b)). We suggest that the locality requirements on movement (the ECP) must be satisfied at LF in the case of adjuncts (following, especially, Lasnik and Saito (1984, 1992)). Given this assumption and the usual conception of the T-model of grammar, we expect that PF deletion does not bring about amelioration effects on any ill-formed structures on the LF side. In fact, sluicing does not repair any island violations when an adjunct moves. Alongside the Subject Condition violations in (19), we find the following Com-

We are now in a position to account for the exemption of Subject Condition effects under sluicing. In Ochi's analysis, intertwining of \bar{A} - and A-chains creates a problem with chain linearization at PF. However, the ill-formed structure due to failure of chain linearization is wiped out by IP-ellipsis under sluicing in (17a) and (18a), which are represented as (36) and (37), respectively.

- (36) Pictures were taken by Mary, but I don't know of whom [~~pictures of whom~~] were [_{VP} taken [pictures of whom] by **Mary**].
- (37) Three students were here, but I don't remember of which field [~~three students of which field~~] were [_{VP}[three students of which field] here]].

Suppose that the nonuniform chain results in an ill-formed structure. For example, the nonuniform A-chain (*[picture of whom]*), [*pictures of whom*] that results after the \bar{A} -chain (*of whom, of whom*) undergoes chain linearization cannot have its tail deleted, since deletion "under identity" fails here. IP-deletion under sluicing, however, eliminates the ill-formed A-chain, which we take to exempt the Subject Condition effects in question. Other island effects clearly have a very different nature. We leave open here exactly what their source is.

Note that the claim that the whole chain matters when chain linearization fails provides an analysis of the contrast between sluicing, on the one hand, and pseudogapping and VP-ellipsis, on the other, in salvaging extraction out of A-moved elements. In contrast to sluicing, VP-ellipsis and pseudogapping cannot exert "repair by ellipsis" effects on extraction out of A-moved elements, as in (38) and (39). (The latter example, involving pseudogapping, is drawn from Lasnik 2001b.)

- (38) *A biography of one of the Marx brothers was published last year, and I wonder which Marx brother [a biography of] is going to be [_{VP} published [a biography of which **Marx brother**]] this year.
- (39) ?*Who will Bill select a painting of, and who will Susan [a photograph of] [_{VP} select a photograph of who]?

The ungrammaticality of these examples indicates again that when the

plex NP Constraint and *Wh*-Island Constraint effects:

- (i) *I met a man who wrote books, but I don't know on which shelf.
- (ii) *Mary found out who met three teachers, but I don't know from which city.

Compare parallel examples with complement PPs.

- (iii) ?I met a man who wrote books, but I don't know on which topic.
- (iv) ?Mary found out who met three teachers, but I don't know of which subject.

tail of a chain cannot be linearized because it fails to delete under identity with its head, the whole chain becomes ill formed. Since the head of the A-chain still survives despite deletion of its tail via either VP-ellipsis or pseudogapping, (38) and (39) are ungrammatical.

4 Conclusion

To conclude, by examining PP-extraction in the sprouting type of sluicing construction, we have argued that subjects raise to the usual surface position in overt syntax. On this basis, we have argued for Chomsky's (2000, 2001a,b) and Lasnik's (2001a) claim that the EPP is a requirement on configuration rather than feature satisfaction. Furthermore, we have noted that PP-extraction from the subject raised to Spec,IP is possible in the IP-elided sluicing construction. While a full-fledged account of Subject Condition effects remains to be worked out, we have shown that IP-deletion under sluicing has the ameliorating effect of repairing the ill-formed structure that, we proposed, results when an A-chain fails to be linearized at PF.

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DETERMINING PAIR-MERGE

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Chomsky (2001) proposes that the distinction between adjuncts and phrases in other grammatical relations follows from the way in which

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