Rescue by PF Deletion, Traces as (Non)interveners, and the *That*-Trace Effect

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The article demonstrates that the rescue-by-PF-deletion account of the amelioration effect of island violations under ellipsis, originally noted by Ross (1969), can be extended to account for the *that*-trace effect, including the adverb amelioration effect, and the lack of intervention effects with certain null arguments that are otherwise found with their overt counterparts, as well as to deduce the generalizations that traces do not count as interveners for relativized minimality effects and that traces void islandhood. The fact that the rescue-by-PF-deletion analysis makes it possible to unify a number of previously unrelated phenomena should be taken as a strong argument in its favor. The current extension of the rescue-by-PF-deletion approach, on which the rescue can arise not only through the deletion process involved in ellipsis but also through regular copy deletion, also accounts for the different behavior of the Superiority Condition and the *Wh*-Island Condition with respect to the amelioration effect under ellipsis, a surprising difference given that both of these are generally subsumed under relativized minimality effects in current research.

Keywords: copy theory of movement, ellipsis, pro, relativized minimality, superiority, *that*-trace effect, (*wh-*)islands

1 Introduction

Ross (1969) makes the important observation that island violations can be rescued by applying ellipsis (sluicing in the cases he is concerned with). The following examples illustrate:[1]

(1) a. *Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which (of the teachers) Ben will be mad if she talks to.
    b. Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which.
    (Merchant 2001:88)

[1] Ross finds the sluicing examples somewhat degraded (? for (2b) and ?? for (3b)), but still better than the nonsluicing examples. Following later literature (see, e.g., Lasnik 2001), I consider such examples acceptable.

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(2) a. *She kissed a man who bit one of my friends, but Tom does not realize which one
       of my friends she kissed a man who bit.
    b. She kissed a man who bit one of my friends, but Tom does not realize which one
       of my friends.
       (Ross 1969:276)

(3) a. *That he will hire someone is possible, but I will not divulge who that he will hire
       is possible.
    b. That he will hire someone is possible, but I will not divulge who.
       (Ross 1969:277)

Chomsky (1972) addresses the amelioration effect with ellipsis, proposing the following account: He suggests that a * (Chomsky actually uses #) is assigned to an island when a movement operation crosses it.[2] If the * remains in the final structure, a violation occurs. However, if a later operation, like ellipsis, deletes a category containing the *-marked element, the derivation is rescued. The phenomenon in question has attracted quite a bit of attention recently, starting with the influential discussion in Merchant 1999 (see also Boeckx and Lasnik 2006, Fox and Lasnik 2003, Hornstein, Lasnik, and Uriagereka 2003, Lasnik 2001, Merchant 2001, 2004, 2008, 2009, Park 2005, among many others), but with one important modification of Chomsky's approach. While for Chomsky (1972) the condition that bans *-marked elements applies at surface structure, in recent work the relevant condition is assumed to hold at PF, with ellipsis treated in terms of PF deletion (see Merchant 2001 for strong evidence that syntactic movement and PF deletion are involved in ellipsis processes like that in (1)). The examples in (1) are then handled as follows: When *wh*-movement crosses the adjunct island boundary, the island is *-marked in both (1a) and (1b). The presence of a * in the final PF representation then leads to a violation in (1a). The problem does not arise in (1b), since the *-marked island is deleted in PF, so that no * is present in the final PF representation. Under this approach, movement out of an island is in principle not impossible, as long as a repair strategy is employed to rescue the otherwise problematic structure at the PF interface. This line of research has proved to be extremely fruitful, yielding rich empirical results and important theoretical conclusions regarding ellipsis and locality of movement.

The goal of this article is to show that a number of phenomena that have resisted a satisfactory explanation and have been previously assumed not to be related to the island-amelioration-via-PF-deletion effect can receive principled explanations if the rescue-by-PF-deletion analysis is extended to them. Since one of these phenomena uncontroversially involves a PF deletion operation, the analysis presented in the article will also confirm the overall approach on which at least some aspects of the locality of movement should be attributed to PF. The proposed analysis will also require us to become more precise regarding where Chomsky's * is placed. The phenomena I will be concerned with are the generalizations that traces of movement do not count as interveners for relativized minimality effects and that traces as heads of islands void islandhood, which raise a serious problem for the otherwise rather successful copy theory of movement (see Chomsky

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[2] *-assignment raises an issue with respect to the Inclusiveness Condition; see in this respect Lasnik's (2001) proposal for handling this issue.

1993, Nunes 2004, among many others); the lack of intervention effects with null arguments in Japanese *ga/no* conversion constructions and certain imperatives that are otherwise found with the overt counterparts of these null arguments; and the *that*-trace effect, which has resisted a satisfactory account in more than two decades of (sometimes very intense) research. I will address the three phenomena in sections 2–4, respectively, offering rescue-by-PF-deletion accounts of the phenomena, thus unifying them with the island amelioration effect illustrated by (1). In section 2, I will also provide an account of the different behavior of the Superiority Condition and the *Wh*-Island Condition with respect to amelioration under ellipsis. Section 5 is the conclusion.

2 Copies and Locality of Movement

2.1 Traces Do Not Count as Interveners

It is a fundamental property of human language that syntactic elements can be interpreted in positions different from the ones where they are pronounced. This is illustrated in (4), where *Mary* occupies subject position but is interpreted as the object of *kiss*. In the Government-Binding framework, such dependencies were treated by employing traces: *Mary* in (4) moves, leaving behind a coindexed trace, a phonetically null element that has interpretational properties of the moved element.

(4) $Mary_i$ was kissed t_i.

Chomsky (1993) adopts the copy theory of movement, according to which the trace of an overtly moved element is a copy of the moved element that is deleted in PF but available for interpretation in LF.

(5) Mary was arrested ~~Mary~~.

The copy theory of movement has yielded very significant accomplishments both theoretically (even apart from the elimination of traces as grammatical primitives) and empirically (especially in the cases where a moved element is either fully or partially pronounced in the original position, which are difficult to deal with under the trace theory of movement; see Nunes 2004 and references therein for a variety of cases of this kind). There is, however, one potentially very serious problem for the copy theory of movement.

Chomsky (1995, 2001, 2004) argues that traces do not count as interveners for relativized minimality effects.[3] The generalization, expressed in (6), is illustrated by the Italian data in (7), taken (slightly revised) from Boeckx 2009.[4]

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[3] See, however, Nunes 2004 for a dissenting view. Note that I will not be concerned here with the exact implementation of intervention effects, simply referring to them as ''relativized minimality effects'' following the original insight of Rizzi (1990). It will be important to bear this in mind.

[4] For possible extensions of (6) that will not be examined here, see Boeckx 2009. Notice that the word order in (7c) is affected by S-V inversion that is found in Italian *wh*-questions (see Rizzi 1991). Notice also that one should be careful in studying the experiencer blocking effect crosslinguistically given that in some languages (e.g., Spanish; see Ausín and Depiante 2000), *seem* + experiencer is a control construction, which obviously affects the availability of the paradigm in (7).

(6) Traces do not count as interveners for relativized minimality effects.

(7) a. *Gianni$_i$ sembra a Maria [t$_i$ essere stanco].
     Gianni seems to Maria to.be ill
     'Gianni seems to Maria to be ill.'

  b. A Maria$_j$, Gianni$_i$ sembra t$_j$ [t$_i$ essere stanco].
     to Maria Gianni seems to.be ill
     'To Maria, Gianni seems to be ill.'

  c. A chi$_j$ sembra Gianni$_i$ t$_j$ [t$_i$ essere stanco]?
     to whom seems Gianni to.be ill
     'To whom does Gianni seem to be ill?'

(7a) illustrates the experiencer blocking effect in Italian. *Gianni* in (7a) undergoes A-movement across an A-specifier, *a Maria*, which yields a Relativized Minimality violation.[5] Significantly, (7b–c), where the intervener is moved, are acceptable. (7) then illustrates (6): while an experiencer blocks movement to the subject position, its trace does not. The generalization in (6) represents an obvious problem for the copy theory of movement; in fact, this is likely the reason why Chomsky stated the generalization in terms of traces, not copies. The generalization would not make much sense under the copy theory of movement, where both the moved element and what is left behind are copies: why then would *a Maria* block subject movement in (7a), but not in (7b)/(8)?

(8) A Maria, Gianni$_i$ sembra a Maria [t$_i$ essere stanco].

There are several obvious answers to the question that turn out not to work. Chomsky (2001) proposes the Activation Condition, according to which X must have an uninterpretable feature to be eligible for movement. In the case of A-movement, the relevant feature is Case. We could then extend the Activation Condition to relativized minimality and assume that elements without uninterpretable features do not count as interveners; more precisely, elements without an uninterpretable Case feature would not count as interveners for A-movement. However, this would not work since inactive elements otherwise do count as interveners, as in Chomsky's (1995) Defective Intervention; in fact, *a Maria* in (7a) does not seem to differ from the lower copy of *a Maria* in (8) in the relevant respect. Assuming that only a full chain can count as an intervener, or that only the head of an A-chain counts as an intervener for A-movement, would not work either: in addition to being the tail of an operator-variable chain, the lower copy of *a Maria* in (8) is also a trivial A-chain. Furthermore, notice that in (9), where the experiencer undergoes clitic movement, both the moved element and what is left behind in the experiencer position intervene between the subject and its trace, yet the example is still acceptable.

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[5] The grammaticality of such constructions in English presents a very interesting problem that will not be addressed here; see Boeckx 2000, 2009, Chomsky 1995, Kitahara 1997, McGinnis 1998, 2001, Stepanov 2002, Torrego 1996, and Ura 2000, among others, for relevant discussion.

(9) Gianni$_i$ gli$_j$ sembra t$_j$ [t$_i$ essere stanco].
    Gianni her seems   to.be   ill
    'Gianni seems to her to be ill.'
    (Boeckx 2009:150)

(9) is of course easily captured by (6): what matters for A-movement is interveners in A-positions, and the intervener in (9) is the trace of clitic movement, which is located in an A-position. However, being a trace, this element cannot cause an intervention effect, given (6).

Returning to the copy theory of movement, how can we make a difference between (7a) and (8)? The relevant intervener looks exactly the same in both examples in the syntax; however, there is a difference between the two in PF. The intervening copy is deleted in (8) but not (7a). In other words, while it is difficult to make the relevant difference between (7a) and (8) in the syntax, it is very easy to make it in PF. How can we make PF relevant here? This can in fact be easily accomplished under the repair-by-PF-deletion approach to locality of movement, where locality violations are incurred in PF, hence can be salvaged by PF deletion. Recall the account of (1) summarized above. Movement across the island takes place in both constructions in (1), as a result of which the troublemaker—namely, the island—is *-marked. The * survives into PF in (1a), yielding a violation, but not in (1b), where it is deleted in PF under ellipsis. I suggest that this is also what happens in (7a) and (8). With the adjunct condition, what causes the problem is crossing the adjunct boundary—that is, the troublemaker is the island, hence the island gets the *. With Relativized Minimality violations, what causes the problem is crossing the intervener—that is, the troublemaker is the intervener, hence the intervener should get the * (pursuing the general approach where a * is assigned to an element that has caused a locality-of-movement violation). Movement in both (7a) and (8) crosses an intervener; hence, the intervener should get a * in both (7a) and (8).

(10) Gianni$_i$ sembra a Maria* [Gianni$_i$ essere stanco].

However, the *-marked intervener is deleted under copy deletion in (8), but not in (7a). Since a * is present in the final PF representation only in (7a), only (7a) is a locality violation.

Under this analysis, the contrast between (7a) and (8) is treated in exactly the same way as the contrast between (1a) and (1b). This was accomplished by using the repair-by-PF-deletion mechanism, which provides a uniform account of the saving effect of ellipsis and movement (i.e., traces) on locality violations. Most importantly, we have now deduced the generalization in (6) in a way that is fully consistent with the copy theory of movement, resolving a serious problem for this otherwise very successful approach. Under the copy theory of movement, there is nothing surprising about (6); the relevant cases involve deletion of a relativized minimality intervener—that is, deletion of an element that has caused a locality-of-movement violation, just like (1b).

2.2 Derivations versus Representations

Another aspect of the amelioration effect discussed above with respect to (7a) and (8) is worth noting. Under the rescue-by-PF-deletion approach, although one aspect of the locality of move-

ment is derivational—namely, *-marking—locality of movement is ultimately representational, since examples involving locality-of-movement violations are not ruled out at the point when movement crosses an island/intervener. This, however, is also necessary under Chomsky's account of the contrast between (7a) and (7b) that is based on the generalization in (6). In other words, this account is also not strictly derivational; if it were, turning the intervener into a trace would not matter since a locality violation would already occur at the point of crossing the intervener. In fact, assuming strict cyclicity, it is hard to maintain a purely derivational approach to locality of movement, where all locality violations would take place exactly at the point of crossing a troublemaker (i.e., an island/intervener), in light of the data in (7), which indicate that a later operation can rescue a locality violation. The difference between Chomsky's account based on (6) and the current account is that under Chomsky's account the later operation is the movement of the intervener, while under the current account the relevant operation is the deletion of the intervener (which is of course preceded by the movement of the intervener). By pushing the relevant operation (and the violation) later into the derivation, the current account ends up deducing (6), unifying it with an independently motivated rescue-by-PF-deletion mechanism; in other words, pushing the violation later into the derivation enables us to unify the amelioration effect of movement in (7)/(8) with the amelioration effect of ellipsis in (1).

2.3 Superiority versus Wh-Islands

I now turn to a very interesting contrast regarding the amelioration effect discussed here between superiority and *wh*-island effects in Serbo-Croatian (SC). As Chung, Ladusaw, and McCloskey (1995) and Merchant (2001:88) observe regarding English, Boeckx and Lasnik (2006) note that ellipsis ameliorates *wh*-island effects in SC, a multiple *wh*-fronting language. Significantly, Stjepanović (1999, 2003) notes that ellipsis does not ameliorate superiority effects in SC (Merchant (2001:110) independently makes the same observation for Bulgarian, another multiple *wh*-fronting language). The observations are illustrated for the superiority effect in (11) and the *wh*-island effect in (12). (Note that both fronted *wh*-phrases in (11) are located in Spec,CP (see Bošković 2003, where it is shown that in the contexts where SC exhibits superiority effects, all fronted *wh*-phrases are located in Spec,CP). The fixed order of fronted *wh*-phrases indicates that Superiority is at work here; see Rudin 1988.[6])

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[6] The superiority effect is also present in the nonsluiced counterpart of (11bii), given in (i).

(i) *Ivan i   Marko ne   znaju šta   ko kupuje.
Ivan and Marko NEG know what who is.buying
'Ivan and Marko do not know who is buying what.'

I have translated Boeckx and Lasnik's (2006) antecedent sentences in (11)–(12) into SC. Notice also that, as observed by Stjepanović (1999:149, 2003), changing the order of the indefinites in (11a) (as in *Nešto je neko kupio*, which is by itself acceptable) does not change the grammaticality status of (11bii) (even with this order, (11bi) is better than (11bii)). According to Grebenyova (2007), Russian differs from SC in this respect.

(11) a. Neko   je nešto   kupio, ali . . .
     someone is something bought but
     'Someone bought something, but . . .'

    b. i. Ivan i   Marko ne   znaju ko   šta.
        Ivan and Marko NEG know who what

      ii. *Ivan i   Marko ne   znaju šta   ko.
         Ivan and Marko NEG know what who
         'Ivan and Marko do not know who what.'

(12) a. Svaki novinar   je izašao   danas da sazna   ko   prodaje jednu knjigu, . . .
     every journalist is gone.out today that finds.out who sells   one   book
     'Every journalist went out today to find out who was selling a certain book, . . . '

    b. ali ne   znam koju   (knjigu).
     but NEG know which   book
     'but I do not know which (book).'
     (Boeckx and Lasnik 2006:152)

The contrast raises a rather interesting question, given that, as Boeckx and Lasnik (2006) note, superiority effects are now typically subsumed under relativized minimality effects, just like *wh*-island effects, a tradition that actually goes back to Cheng and Demirdache (1990), who adopt Rizzi's (1990) original conception of relativized minimality but argue that *wh*-phrases should be treated as Ā-elements because of their semantics—namely, because they are inherent operators (see also Cinque 1986), even when they are located in A-positions. One could interpret the contrast as indicating that Superiority should not be subsumed under Relativized Minimality; after all, there are several approaches to Superiority that treat superiority effects quite differently from relativized minimality effects. From the data in (11), both Merchant (2001:114) and Stjepanović (1999, 2003) argue that superiority effects are a result of a derivational constraint on movement. Although there is no detailed discussion of *wh*-islands in Merchant 2001, Merchant does hint that *wh*-islands should not be treated in this manner. In their comparison of (11b) and (12b), Boeckx and Lasnik (2006) also speculate that Superiority should be treated as a derivational condition, which reflects how narrow syntax works and hence is immune to interface operations like ellipsis; this treatment, they suggest, should not be extended to *wh*-islands, which, according to them, like other islands that are subject to the amelioration effect, should be treated in terms of a representational, interface condition that can be repaired with PF operations like ellipsis. It would obviously be preferable not to posit such a difference between different locality violations. I will therefore explore a different approach, which still treats Superiority violations like all other island violations; more precisely, it treats them like another instance of relativized minimality effects. I will show now that the contrast between (11) and (12) with respect to the ellipsis amelioration effect is actually expected under the current, copy deletion approach to relativized minimality locality effects, even if both superiority and *wh*-island effects are treated in terms of a representational interface condition that can be repaired with PF operations like ellipsis, in line with the overall approach to the locality of movement adopted above.

Before demonstrating this, I will first address a technical issue that has largely been ignored in the repair-by-PF-deletion literature, Merchant 2008 being an exception (though within a somewhat different system from the one adopted here). Recall that, as discussed above, when movement takes place out of an island/across an intervener, a * is placed on the troublemaker (i.e., the island/intervener). If the *-marked element survives into PF, a violation ensues; if the *-marked element is deleted, there is no violation. Earlier works have argued that the *-marked element can be deleted by employing ellipsis; I have argued here that the *-marked element can also be deleted via copy deletion, which I have shown explains Chomsky's generalization that traces do not count as interveners. Now, consider this scenario: X moves out of an island Y, with Y getting a * as a result of this movement. Y itself then moves, leaving a copy behind. What should happen with the *? Should it remain only on the original copy, should it be placed only on the moved copy, or should it be placed on both copies? In other words, what happens with *s under movement? As far as I can tell, there is no clear theoretical reason to prefer one of these options over the others, although if copying is taken literally, as copying everything, the last option may actually be preferred. (Merchant (2008) in fact adopts this position. Park (2005), on the other hand, adopts the first of the three options.) However, it turns out that what appears to be a rather technical question has significant empirical consequences, which means that the above options can be teased apart on empirical grounds. If a * were to remain only on the lower copy, since the copy is typically deleted under copy deletion the island effect should be voided (13a). On the other hand, if *s are copied under movement, deletion of the lower copy should not rescue the derivation since a *-marked element will remain in the final representation (13b). (I disregard here the option where the * is simply carried along under movement, hence placed only on the higher copy, since this option does not differ in the relevant respect from option (13b); that is, this option also fails to rescue the relevant derivation.)

(13) a. Y   X   Y*   Y X ~~Y*~~
      b. Y*   X   Y*   Y* X ~~Y*~~

The question, then, is what happens when an island is moved. Does such movement repair island violations? The answer is no: unlike ellipsis of an island, movement of an island does not repair island violations. This is shown by the English data in (14), where extraction out of a complex NP (with a relative clause) is followed by movement of the NP, and the German examples in (15), which are more informative given that the language is independently known to allow the necessary remnant movement operations, which may be an interfering factor with the English examples.

(14) a. *You wonder who she kissed [a man who bit t]?
      b. *[A man who bit t] you wonder who she kissed?

(15) a. Hans hat einen Versuch unternommen, ein Auto zu stehlen.
          Hans has an   attempt made   a car to steal
          'Hans made an attempt to steal a car.'
      b. Hans hat einen Versuch, ein Auto zu stehlen, unternommen.
      c. Einen Versuch, ein Auto zu stehlen, hat Hans unternommen.

    d. *Ein Auto hat Hans einen Versuch unternommen zu stehlen.

    e. *Ein Auto hat Hans einen Versuch zu stehlen unternommen.

    f. *[Einen Versuch t_i zu stehlen] hat Hans ein Auto$_i$ unternommen.

Focusing on the German examples, (15a–c) give the baseline data. (15d–e) show that extraction out of the complex NP headed by *Versuch* is disallowed. (15f) involves scrambling of *ein Auto*, followed by remnant movement of the island (the complex NP) to Spec,CP (as is well known, German otherwise allows such remnant movements). The ungrammaticality of the construction shows that extraction out of an island cannot be rescued by a follow-up movement of the island.[7]

    The data in (14)–(15) thus favor option (13b), where the * is copied under movement, which means that islandhood is not voided through copy deletion (see also footnote 8). As noted above, the option may actually also be preferable theoretically; if movement is literal copying, we would expect it to copy everything, including *s. Significantly, the contrast between superiority and *wh*-islands with respect to the PF deletion amelioration effect from (11)/(12) is now accounted for. In (12), a * is placed on the troublemaker, namely, the intervening element *who*. Since the *-marked element is deleted under ellipsis, there is no locality violation in (12). (I use English words here for the SC example from (12).)

    (16) I don't know which book ~~every journalist went out today to find out [who* was selling]~~

Things are different in (11), though. Here is how the derivation in (11bii) proceeds under standard assumptions regarding how multiple *wh*-fronting works, where the order of fronted *wh*-phrases reflects the order of their *wh*-movement. The object *wh*-phrase moves across the subject *wh*-phrase, an intervention effect as a result of which the subject *wh*-phrase is *-marked (see (17a); only the relevant part of the structure is shown in (17)). The subject *wh*-phrase then undergoes *wh*-movement, either right-adjoining to the first *wh*-phrase, as in Rudin 1988, or tucking in in a lower specifier, as in Richards 2001. The * is copied under movement (see (17b)). Ellipsis then applies, eliding the IP (see (17c)).

    (17) a. [$_{CP}$ Šta [$_{IP}$ ko* . . .

           b. [$_{CP}$ Šta ko* [$_{IP}$ ko* . . .

           c. [$_{CP}$ Šta ko* ~~[$_{IP}$ ko* . . .~~

Notice now that, in contrast to what happens in the *wh*-island derivation in (16), a * does survive into PF in the superiority derivation in (17). Consequently, the superiority derivation results in a locality violation. The contrast between superiority and *wh*-islands regarding the ellipsis

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[7] The same holds if only the infinitive undergoes remnant movement (in fact, such examples are even worse than (15f); thanks are due to Susi Wurmbrand for providing the German examples in (15) and (i)).

    (i) **Zu stehlen hat Hans ein Auto einen Versuch unternommen.

          to steal   has Hans a   car an   attempt made

amelioration effect from (11)/(12) is then accounted for.[8] Notice also that even standard superiority effects with multiple *wh*-fronting (as in the nonsluiced counterpart of (11bii) given in (i) in footnote 6) require *s to be present in the head of the *wh*-chain, since lower *wh*-copies are deleted under standard copy deletion in examples that do not involve sluicing (like (i) in footnote 6).

The above account of (11)–(12) maintains the assumption that Superiority should be subsumed under Relativized Minimality; in other words, the account does not require treating superiority and *wh*-islands differently, the former as a derivational and the latter as a representational locality violation, as suggested by Boeckx and Lasnik (2006). They can both be treated in the same way, as representational locality violations along the lines of the general approach to the locality of movement adopted here. Moreover, we did not have to adopt any additional assumptions to account for the contrast in question. All the ingredients of the account were needed independently: it in fact turned out that a superiority amelioration under ellipsis would have raised a problem for the system, requiring additional assumptions; the lack of an amelioration effect is actually exactly what the system predicts.

However, the above account of the different behavior of superiority and *wh*-islands with respect to the amelioration effect brings us back to the examples that motivated the generalization in (6), namely, (7a–b). If *s are copied under movement, the deletion of the original intervening copy, which was *-marked (see (8) and (10)), will not help here, since a *-marked copy will still remain in the final PF representation, namely, the head of the experiencer chain. An obvious difference between (8) and (11bii) is that the higher copy of the intervener precedes the element whose movement has caused the violation in (8), but not in (11bii) (or (i) in footnote 6, for that matter). In other words, the intervener intervenes between the moved element and its trace even after intervener movement in (11bii), but not (8) (i.e., (7b–c)). We can try to capitalize on this difference (see the discussion below). However, no matter how this difference is implemented, the account will not extend to the case of clitic movement, since in such cases the moved experiencer follows the element whose movement has caused the violation, just as in the superiority example. I will therefore first discuss the clitic example, repeated here from (7a) and (9).

(18) a. *Gianni$_i$ sembra a Maria [t$_i$ essere stanco].
          Gianni seems to Maria   to.be ill
          'Gianni seems to Maria to be ill.'
     b. Gianni$_i$ gli$_j$ sembra gli$_j$* [Gianni$_i$ essere stanco].
          Gianni her seems   to.be ill
          'Gianni seems to her to be ill.'

If (18b) is treated on a par with *wh*-movement in (11), where cliticization would involve clitic movement with the * being copied under clitic movement, just as it is copied under *wh*-movement,

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[8] In its spirit, this account is similar to Merchant's (2004, 2008, 2009) approach, where the presence or absence of an amelioration effect depends on the amount of structure that is elided (more precisely, whether *-marked elements are stranded outside of the ellipsis site).

there should be no amelioration effect in (18b), just as there is none in (11bii), since the * on the clitic would survive into the final PF derivation. There are several ways of handling the issue raised by (18b). Chomsky (1995) argues that complex heads, typically created by head movement, are special with respect to PF processes like linearization (see also Nunes 2004). In particular, he argues that Kayne's (1994) Linear Correspondence Axiom, a linearization procedure in Chomsky's system, does not apply within a complex head because a complex head is converted by the morphology into a phonological word before the Linear Correspondence Axiom applies. Nunes (2004) expands on this analysis, providing rich empirical evidence in its favor, and implements Chomsky's morphological reanalysis in terms of morphological *fusion*, which fuses parts of complex heads into a single morphological element. We can then assume that the relevant morphological process eliminates *s, which after all are not morphological objects, so that no * can remain in the result of the morphological process in question.

There is another, more interesting way of handling (18). It is often argued in the literature that clitic movement, or head movement in general (see, e.g., Boeckx and Stjepanović 2001, Chomsky 2001), is PF movement. Suppose now that *s, which are created in the syntax, are not copied under PF movement; they are only copied under syntactic movement. In both (11bii) and (18b), the intervening elements (*ko* and *gli*) are *-marked in the syntax as a result of *wh*-movement and subject movement, both of which are syntactic movements, crossing the relevant elements. The intervener then undergoes *wh*-movement in the syntax in (11bii), with the * copied under *wh*-movement. Since the * on the higher copy remains in the final representation (the lower * is deleted in PF), (11bii) is ruled out as a locality violation.

(19) [$_{CP}$ Šta ko* $_{[IP}$ ~~ko*~~ ~~šta~~ . . .

On the other hand, under the PF head/clitic movement analysis the intervening element in (18b)—namely, the experiencer—undergoes PF movement. Since, by hypothesis, *s are only created in the syntax, they are not copied under PF movement (since this would involve additional * creation in PF). The only * in (18b) is then the * on the lower element, and that * is deleted under copy deletion.

(20) [$_{IP}$ Gianni gli . . . ~~gli*~~ ~~Gianni~~ . . .

The analysis sketched above makes a rather interesting prediction: any PF movement of a trouble-maker (island/intervener) should lead to an amelioration effect, on a par with ellipsis. The prediction is not easy to test because of the uncertainty regarding which movement operations should count as PF movements. I therefore have to leave investigating whether or not the prediction of this analysis is borne out, pending better understanding of PF movement (i.e., what counts as PF movement).

The above account of the clitic amelioration effect cannot be extended to (7b–c), since in these constructions the intervener undergoes syntactic movement (*wh*-movement and topicalization), just as in (11b). As noted above, we can appeal here to an obvious difference between (7b–c) and (11bii): in (11bii), but not in (7b–c), the intervener still intervenes between the moved element and its trace even after the follow-up movement of the intervener. We can implement

this by assuming that a * is copied under movement only if the movement does not cross the element that has caused *-assignment. The moved experiencer would then not get a * in (7b–c), since these examples involve recrossing, with the experiencer crossing *Gianni* this time; but *ko* in (11bii) would get a * when undergoing *wh*-movement, since *wh*-movement of *ko* does not involve recrossing (see (17)).

   The analysis raises several issues. It requires keeping track of which element has caused *-assignment. Also, it requires making a distinction between intervention effects and rigid islands, since when a rigid island crosses the element that originally moved out of the island, no improvement results (see (21a,c), with more detailed representations in (21b,d)). Since the lower copy of the island is deleted in (21) (see (21b,d)), it must be the case that the * is copied under movement of the island; in other words, recrossing does not matter here.

(21)   a. *A man who bit, you wonder who she kissed.
       b. *[A man who bit ~~who~~]* you wonder who she kissed ~~[a man who bit who]~~*.
       c. *Einen Versuch zu stehlen hat Hans ein Auto unternommen.
            an   attempt to steal   has Hans a   car   made
            'To steal a car, Hans made an attempt.'
       d. *[Einen Versuch ~~ein Auto~~ zu stehlen]* hat Hans ein Auto ~~[einen Versuch ein Auto~~
            ~~zu stehlen]~~* unternommen.

Finally, there are clearly unacceptable examples involving recrossing, which argue against this approach. One such example is (22a), with the relevant copies shown in (22b). (I indicate only the lowest and highest copies in (22b), where *what* first crosses *who*, and then *who* crosses *what*.)

(22)   a. *Who do you wonder what Mary told that John should buy?
       b. *who do you wonder what Mary told who that John should buy what

There is, however, another way of handling the issue under consideration, whereby the amelioration effect for all experiencer movement, regardless of whether it is clitic or *wh-*/topic movement, can be treated in the same way. Furthermore, under this account, the relativized minimality/rigid island difference can easily be maintained.

   Let us assume that in the case of relativized minimality effects, when X crosses Y, Y is not simply assigned a *. Rather, since this type of information is crucial for Relativized Minimality violations (but not for rigid island violations, where it is completely irrelevant), there is also an indication regarding what type of Relativized Minimality violation we are dealing with (e.g., A, Ā, or head intervention effects). Technically, this can be implemented either by using different types of marking (i.e., not just a * for all violations) or by adding a diacritic to the *, as in (23), where X would be undergoing A-movement.

(23)   X Y^{*A} X

The proposal now is that the * is copied under movement only if Y undergoes the type of movement that has caused the violation. So, if Y in (23) undergoes A-movement, the * is copied on the head of the Y chain, but if Y undergoes Ā-movement, it is not. The intuition here is that

there should not be a conflict between a * on Y and the position in which Y is located, which means that Y cannot have ^{*A} if it is located in an $\bar{A}$-position.[9]

Consider now the three relevant cases: the clitic-moved experiencer, the *wh-*/topic-moved experiencer, and superiority. (23) is actually an abstract representation of the experiencer blocking effect, since the effect involves A-movement across an A-specifier. The intervener should then be marked as in (23). Since in the cases where the experiencer blocking effect is voided the intervener undergoes head movement (9) or $\bar{A}$-movement (7b–c), ^{*A} is not copied under experiencer movement. This, however, is not the case with the superiority example from (11bii) (or (i) from footnote 6). Here, *šta* crosses *ko* when undergoing $\bar{A}$-movement (see (17a)); in other words, we are dealing here with an $\bar{A}$-movement Relativized Minimality violation (recall that *ko* counts as an $\bar{A}$-element), as in (24).

(24) X Y$^{*\bar{A}}$ X

Since the intervener, *ko*, then undergoes *wh*-movement (see (17b)), the * is copied on the moved element. We then have (25) for the three cases under consideration.

(25) a. X Y Y^{*A} X   (clitic-moved experiencer)
     b. Y X Y^{*A} X   (*wh-*/topic-moved experiencer)
     c. X Y$^{*\bar{A}}$ Y$^{*\bar{A}}$ X   (superiority)

In all these cases, the second Y is deleted, under copy deletion in (25a–b) and under ellipsis (in (11bii)) or copy (in (i) in footnote 6) deletion in (25c). Since a *-marked element survives deletion only in (25c), a violation results only in this case.[10]

(26) a. X Y ~~Y^{*A}~~   (clitic-moved experiencer)
     b. Y X ~~Y^{*A}~~   (*wh-*/topic-moved experiencer)
     c. X Y$^{*\bar{A}}$ ~~Y$^{*\bar{A}}$~~   (superiority)

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[9] Nothing changes in the discussion to follow if *s are always copied under movement, but are deleted in the case of a conflict between *-marking and the position in which the relevant element is located. Under this analysis, if Y^{*A} undergoes $\bar{A}$-movement, ^{*A} is copied under the movement and then deleted.

[10] Note also that (22) abstractly has the structure in (i); since two *s are present in the final structure, the example involves a locality violation. (The example in fact involves a traditional Superiority and a traditional *Wh*-Island Condition violation, hence two *s. Note that the * is copied under movement of X, that is, *who*.)

(i) X$^{*\bar{A}}$ Y$^{*\bar{A}}$ ~~X$^{*\bar{A}}$~~ ~~Y~~

An anonymous reviewer raises a question regarding the superiority case, which involves *wh*-phrases: what would happen if, after causing the intervention effect, the *wh*-phrase Y from (26c) were to undergo A-movement followed by $\bar{A}$-movement? Recall, however, that *wh*-phrases count as inherent operators—that is, $\bar{A}$-elements—even when they are located in an A-position. Since they get $^{*\bar{A}}$ even if they are located in an A-position, it is natural to assume that $^{*\bar{A}}$ should be copied even under A-movement of *wh*-phrases. The issue is likely moot, however, since there is strong empirical evidence that this kind of derivation where A-movement feeds $\bar{A}$-movement simply does not exist (see Bošković 2008a, to appear, Chomsky 2008, Hiraiwa 2005, Holmberg and Hróarsdóttir 2003, and McCloskey 2000 for evidence to this effect from Kinande, Italian, Icelandic, and English).

The analysis in question then gives us exactly what we need: movement of the intervener improves the cases involving the experiencer blocking effect, but not the case involving a Superiority violation. Whether or not the intervener moves in front of or following the element whose movement caused the original *-marking is irrelevant here. This has enabled us to treat voiding of the experiencer blocking effect under clitic and *wh-*/topic movement in exactly the same way while still making a distinction between these cases and the superiority case. Recall also that the alternative analysis outlined above (21) raised the question of how to make a principled distinction between relativized minimality and rigid islands, since in the case of rigid islands movement of the island never rescues a locality violation. Making a principled distinction in this respect is very easy under the analysis given here. Since for rigid islands it does not matter at all whether the element crossing the island is undergoing A-movement, Ā-movement, or head movement, all that the movement should leave on the island is a *. Since there can then be no conflict between *-marking and the movement that the *-marked element undergoes, the * is always copied under the movement of the troublemaker, namely, the island.[11]

The analysis proposed above thus enables us to make exactly the right cut with respect to the rescuing effect under PF deletion, explaining why Superiority violations cannot be rescued by PF deletion.

It is worth noting here that the superiority data discussed in this section provide evidence that the generalization in (6) is not quite correct since descriptively speaking, in the problematic superiority case a trace, which is furthermore deleted in PF, does cause an intervention effect. I have argued that whether or not a trace causes an intervention effect depends on the type of movement that the element that leaves behind the trace undergoes. In the superiority case, the trace, which acted as an intervener for Ā-movement, is itself a trace of Ā-movement. This is precisely the case where deletion of the intervener does not help. We would expect to find the same kind of situation with A-movement. In the cases where the experiencer blocking effect was voided by turning the experiencer into a trace, the trace in question was a trace of either *wh-*/topic or head movement. Since the experiencer blocking effect is an A-movement intervention effect, we would then expect that if the experiencer undergoes A-movement, leaving behind an A-trace, no improvement should result. However, it is difficult to construct relevant examples because of interfering factors. It is in fact difficult to test this hypothesis with respect to A-movement more generally because of independent constraints on A-movement. However, one relevant case may involve a locality effect with *allege*-class verbs, discussed in Bošković 1997.

Pesetsky (1992) establishes the descriptive generalization that agentive verbs cannot exceptionally Case-mark lexical NPs, as illustrated in (27).

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[11] On the other hand, as discussed above, a conflict does arise in the experiencer movement cases, where a ^{*A} would need to be copied under Ā-movement.

(27) a. *John wagered the woman to know French.
   b. *Mary alleged the students to have arrived late.

In Bošković 1997, I deduce Pesetsky's generalization as an intervention effect from the proposal that agentive verbs have an additional VP shell (see Hale and Keyser 1993). In short, I argue that as a result of the presence of the additional VP shell, matrix Spec,Agr_OP, the accusative-checking position, is too far from the embedded clause subject.[12]

(28) *John$_i$ wagered [$_{Agr_OP}$ the woman$_j$ [$_{VP}$ t$_i$ [$_{VP}$ t$_i$ [$_{IP}$ t$_j$ to t$_j$ know French]]]].

Putting aside the details of the structure, what is important for our purposes is that (27a–b) involve a locality violation. In particular, what we are dealing with here is exactly the A-movement counterpart of the failure to rescue a locality violation via PF deletion with Superiority. What is going on here is that movement of *the woman* across *John* induces a locality violation. *John* then undergoes movement, turning the original intervener into a trace/copy deleted in PF. This, how-ever, does not rescue the locality violation since *John* undergoes the same type of movement as the one that caused the intervention effect, just as in the superiority case. In other words, what we have here is (29).

(29) a. John^{*A} the woman ~~John^{*A}~~ the woman
   b. Y^{*A} X ~~Y^{*A}~~ X

In its original position, *John* gets a ^{*A} since it induces an A-movement intervention effect. Since, as in the superiority case (25c) and unlike in the experiencer blocking cases (25a–b), *John* under-goes the same type of movement, the * is copied under movement of *John*; as a result, deletion of the lower *-marked copy of *John* does not save the construction. The construction in question then may represent an A-movement counterpart of the failure to rescue a locality violation in the superiority case, which involved Ā-movement. As noted above, the superiority case and the *allege* case provide evidence that the generalization in (6) is not quite correct. The deduction of (6)

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[12] See Bošković 1997 for details of the analysis and justification of the structure in (28) (note that I argue that exceptionally Case-marked NPs must undergo overt object shift in English). The upshot of the analysis is that under certain conditions, equidistance allows skipping of one specifier, but never of two specifiers, which is what would have to happen with agentive exceptional Case-marking constructions. (See Bošković 1997 for discussion of simple transitives; notice that *John* in (28) skips only one specifier when moving to Spec,IP. Notice also that the analysis in Bošković 1997 is consistent with Ochi's (2009) analysis of Japanese *ga/no* conversion outlined in section 3.1, but would require some adjustments under the alternative analysis of *ga/no* conversion proposed there.)

In Bošković 1997, I also argue that the additional agentive shell, which is responsible for the ungrammaticality of (27a–b), is not present in passive constructions, which gives us a straightforward account of the contrast between active (27a–b) and passive (ia–b).

(i) a. The woman was wagered to know French.
   b. The students were alleged to have arrived late.

The additional agentive shell is also not present with verbs like *believe*, which can exceptionally Case-mark.

presented above, however, accounts both for the cases that originally motivated the postulation of (6) and for the exceptional cases, which appear to violate (6).[13]

2.4 Traces Do Not Head Islands

Before closing the section on the effect of copy deletion on locality-of-movement violations, I will briefly discuss another respect in which copy deletion affects locality of movement, which will also enable us to pinpoint where a * is placed on the element inducing a locality violation.

Several authors have observed that a phrase that acts as an island with respect to locality of movement, which for ease of exposition I will refer to as a *barrier*, ceases to function as a barrier if it is headed by a trace. In (30a), I give the descriptive statement of this effect from Bošković 2005; and in (30b–c), I give an illustration of the effect from Galician, which was discussed in Uriagereka 1988, 1996.

(30) a. A phrase that is normally a barrier to movement ceases to be a barrier if headed by a trace.
(Bošković 2005:35)

b. *De quén$_j$ liches   os mellores poemas de amigo t_j?
of whom read (you) the best   poems of friend

c. (?)De quén$_j$ liche-los$_i$ [$_{DP}$[$_{D'}$ t_i [$_{NP}$ mellores poemas de amigo t_j]]]?
of whom read (you)-the   best   poems of friend
'Who did you read the best poems of friendship by?'
(Uriagereka 1996:270–271)

(30b) shows that *wh*-movement is not possible from a DP headed by a definite article in Galician. In other words, such DPs are barriers. Significantly, when the article head of the DP incorporates into the verb, as in (30c) (see Uriagereka 1988 for arguments for D-incorporation), *wh*-movement from the DP is possible. In other words, the DP is not a barrier if it is headed by a trace, in accordance with (30a). (For additional examples from a variety of languages and constructions that come under the generalization in (30a), see Baker 1988, Bošković 2005, Corver 1992, and

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[13] It is worth noting that, unlike in most other works on the amelioration effect of ellipsis (see, e.g., Fox and Lasnik 2003, Kennedy and Merchant 2000, Lasnik 2001), in Merchant 2008 it is assumed that *s are features of traces rather than island nodes. Merchant shows that the assumption provides an account of the fact that eliminating a variable amount of structure via ellipsis can variably affect the outcome (if there are offending intermediate traces outside of the ellipsis site, the structure cannot be saved). As is, Merchant's proposal would not work for the phenomena discussed here, where it is the deletion of the troublemaker that has an amelioration effect; the chain of the element that undergoes the original offending movement looks exactly the same in the acceptable and unacceptable cases (compare, e.g., (7a) and (7b)). One could interpret this as favoring the *-on-the-troublemaker approach (see Fox and Lasnik 2003 for such an account of the VP-ellipsis case Merchant (2008) is concerned with). However, I believe that the conclusion would be premature. What we are dealing with here is two different traditions of *-marking: Chomsky's (1972), which places *s on islands; and Lasnik and Saito's (1984), which places *s on traces. The two traditions are motivated by different phenomena and are not really mutually exclusive. Park (2005) in fact explicitly combines the two. (Recall also that, as pointed out above, the current analysis does follow Merchant 2008 in several respects.)

Uriagereka 1988. Regarding Galician examples like (30b–c), article incorporation is also possible from adjuncts (Uriagereka 1988:143), which furthermore also voids islandhood of the adjuncts for *wh*-movement (Juan Uriagereka, pers. comm.). For additional examples involving voiding of adjunct islandhood, see Bošković 2005.)

Notice now that like (6), (30a) is an instance of an amelioration effect of traces on locality-of-movement violations. Moreover, just like the generalization in (6), the generalization in (30a) can be deduced from the rescue-by-PF-deletion mechanism once we allow the rescuing effect to arise not only through ellipsis deletion but also through copy deletion. All we have to do to be able to treat (30a) as another instance of rescue by PF deletion is to assume that in the case of movement across barriers (i.e., movement out of islands), the * is placed on the head of the phrase functioning as a barrier/island, not the whole island. The * is then placed on t_i in (30c) (not on DP). But t_i is actually a copy that is deleted in PF. As a result, no * is present in the final PF representation of (30c).[14] The rescue-by-PF-deletion mechanism thus accounts for the contrast in (30b–c). More generally, it deduces the generalization in (30a), unifying it with (6) and the amelioration effect of island violations under ellipsis. The contrasts in (1), (7), and (30b–c) thus receive a unified treatment under the rescue-by-PF-deletion analysis.

Having shown that the empirical domain of the rescue-by-PF-deletion approach can profitably be extended if the rescue can arise not only through the deletion involved in ellipsis but also through regular copy deletion, in the next section I turn to another case where null elements fail to induce an intervention effect that their overt counterparts do induce.

3 Null Arguments/Pro and Intervention Effects

The pro-drop parameter was at the center of theorizing in the Government-Binding framework. Interest in the phenomenon decreased with the advent of minimalism, only to revive in recent years. One of the hotly debated issues is whether the traditional pro arises through PF deletion in at least some languages. Under this analysis, often referred to as the argument ellipsis analysis, the antecedent of the null argument is present in place of the null argument in the syntax, but it is deleted in PF.[15] The argument ellipsis analysis has been quite successfully applied to East Asian languages by Goldberg (2005), Kim (1999), Oku (1998), Saito (2001, 2004, 2007), Şener and Takahashi (2009), Sugawa (2008), Takahashi (2008a,b), and Takita (to appear a,b). Therefore, I will discuss it with respect to these languages, briefly touching on other languages, where applying this analysis is more controversial, at the end of the section.

What is important for present purposes is a very interesting prediction that the PF deletion analysis makes with respect to pro and intervention effects. (Note that I will continue to use the term *pro* for ease of exposition, although under the argument ellipsis analysis null arguments do

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[14] Since article incorporation can precede *wh*-movement from the DP, hence *-marking caused by the *wh*-movement, the head of the incorporation chain that is adjoined to V does not get a *; otherwise, we might have to fall back on one of the mechanisms from section 2.3 that prevent *s from being carried under head movement.

[15] The argument ellipsis analysis can actually be implemented in terms of either PF deletion or LF copying. I adopt the former alternative here, following Saito (2001).

not actually involve the null pronominal pro.) Suppose that movement across pro results in an intervention effect; that is, suppose that pro induces an intervention effect. As a result, pro will be *-marked. Since under the PF deletion analysis whatever is present in place of pro is deleted in PF, the *-marked element is deleted in PF and the derivation should be rescued from a locality violation. In other words, the prediction is that in languages where pro should be treated in terms of PF deletion/argument ellipsis, pro should not induce intervention effects (provided that we are not dealing with one of the exceptional cases discussed in the previous section). In the next section, I argue that this is indeed the case.

3.1 Ga/No *Conversion*

The argument concerns the well-known phenomenon of *ga/no* conversion in Japanese, illustrated in (31). As is well known, the conversion is restricted to sentential modifiers, which indicates that the nominal projection is somehow responsible for genitive Case assignment. (Unless otherwise indicated, all the data in this section are taken from Saito 2001.)

(31) Taroo-ga/-no   it-ta   tokoro
     Taroo-NOM/-GEN go-PAST place
     'the place where Taroo went'

(32) Taroo-ga/*-no   soko-e   it-ta.
     Taroo-NOM/-GEN there-to go-PAST
     'Taroo went there.'

What is of interest here is that a genitive subject is impossible when an object NP is present, as reported by Harada (1971), Hiraiwa (2000), Saito (2001), and Watanabe (1996), among many others.

(33) a. *Taroo-no *hon-o*   kat-ta   mise
        Taroo-GEN *book-ACC* buy-PAST shop
        'the shop where Taroo bought a book'
     b. Taroo-ga *hon-o*   kat-ta   mise
         Taroo-NOM *book-ACC* buy-PAST shop

Hiraiwa (2000) and Saito (2001) propose accounts of these data based on Hiraiwa's assumption that the genitive of *ga/no* conversion is assigned not by the noun, but by T of the nominal modifier (adnominal T), which Hiraiwa and Saito argue can assign either nominative or genitive Case. To account for (33), Hiraiwa and Saito propose the following conditions, assuming that v is responsible for accusative Case:

(34) a. Spell-out of morphological accusative case by v triggers nominative Case checking
        on T in the next strong phase.
        (Hiraiwa 2000:114)
     b. When an adnominal T checks genitive, it absorbs the Case feature of v.
        (Saito 2001:5)

When the subject is marked genitive as in (33a), (34a–b) prevent Case checking of the accusative NP. (34a–b), however, really block genitive Case assignment in (33) by brute force; the question still remains why accusative Case assignment has an effect on genitive Case assignment in this instance.

Now, Saito (2001) shows that only object NPs induce an intervention effect with respect to genitive subjects. Thus, an adverb can occur between a genitive subject and the verb, as (35) shows. This is not surprising since adverbs are not subject to Case marking. If accusative Case assignment is blocked when the subject gets genitive Case, adverbs should not be affected by this.

(35) Taroo-ga/-no   kinoo   it-ta   tokoro
     Taroo-NOM/-GEN yesterday go-PAST place
     'the place where Taroo went yesterday'

Significantly, Hiraiwa (2000) observes that null objects also do not exhibit intervention effects. To see this, consider the following data discussed by Saito (2001), which were taken from Miyazawa 2001. (37) illustrates the standard intervention effect of accusative objects. (38), which involves a null object (and naturally follows (36)), shows that a null object does not block *ga/no* conversion.

(36) Ziroo-ga   hazimete   Nagoya-ni ku-ru-node,   minna-ga iroiro-na basyo-ni
     Ziroo-NOM for.the.first.time Nagoya-to come-PRES-since all-NOM   various   place-to
     tureteik-u yotei-desu.
     take-PRES plan-is
     'Since Ziroo is coming to Nagoya for the first time, the plan is for everyone to take him to various places.'

(37) Hanako-ga/*-no   Ziroo-o   tureteik-u tokoro-wa Nagoya-zyoo-desu.
     Hanako-NOM/-GEN Ziroo-ACC take-PRES place-TOP Nagoya-Castle-is
     'The place that Hanako is taking Ziroo is the Nagoya Castle.'

(38) Hanako-ga/-no   e tureteik-u tokoro-wa Nagoya-zyoo-desu.
     Hanako-NOM/-GEN take-PRES place-TOP Nagoya-Castle-is
     'The place that Hanako is taking (him) is the Nagoya Castle.'

Turning the object into a phonologically null element does not always help, however. Thus, Watanabe (1996) and Saito (2001) show that scrambling an intervening object does not void the intervention effect.

(39) hon-o   Taroo-ga/*-no t kat-ta   mise
     book-ACC Taroo-NOM/-GEN buy-PAST shop
     'the shop where Taroo bought a book'

Recall that Saito (2001) assumes that when the subject is nominative, v has the accusative feature and checks the accusative of the object NP. On the other hand, when the adnominal T checks genitive, it absorbs the accusative feature of v by hypothesis. Hence, the accusative feature of

the object fails to be checked, leading to the ungrammaticality of both (33a) and (39) (on the *no* option). What about null objects? Here, Saito adopts the analysis whereby null objects in Japanese can result from argument ellipsis. The argument ellipsis analysis has been argued for by a number of researchers working on Japanese and Korean (see Goldberg 2005, Kim 1999, Oku 1998, Saito 2004, 2007, Şener and Takahashi 2009, Sugawa 2008, Takahashi 2008a,b, Takita, to appear a,b). Since I will also adopt this analysis, I will briefly summarize below some of the arguments adduced to support it.

The traditional approach to null arguments in Japanese was to assume that they are uniformly phonologically null pronominal elements (pro). As pointed out in the literature on argument ellipsis, this analysis faces a number of problems. Consider, for example, the data in (40)–(41). (Such data were first discussed in this context by Huang (1987) with respect to Chinese; see also Saito 2001.)

(40) John-ga   e tatai-ta.
      John-NOM   hit-PAST
      a. *'John hit himself.'
      b. 'John hit someone else.'

(41) Daremo-ga   zibun-o hihansi-ta-no?   Iie, John-wa e hihansi-na-katta-(yo).
      everyone-NOM self-ACC criticize-PAST-Q no John-TOP   criticize-NEG-PAST-EXCL
      'Did everyone criticize himself? No, John didn't criticize himself.'

While the null object cannot corefer with the subject of its clause in (40), it can do so in (41). If the null object were a null pronominal pro, the second sentence in (41) would violate Condition B on the relevant reading; furthermore, the contrast between (40) and (41) would remain unaccounted for. The argument ellipsis analysis straightforwardly captures these data: e in (41) can be an elided *zibun* 'self' because there is an appropriate linguistic antecedent in the discourse for the deletion of *zibun*. This is not the case in (40), where the only possible antecedent is *John*.

Additionally, Takahashi (2008a) observes that Japanese (42b) allows the reading on which the set of teachers Hanako respects is different from the set of teachers that Taroo respects, in addition to the E-type reading, on which Hanako respects the same set of teachers as Taroo does. In this regard, (42b) patterns with English (43c), involving ellipsis, rather than English (43b), involving a pronominal (where (43b–c) are intended as replies to (43a)). Takahashi interprets these data as an argument against the pro analysis, on which we would expect (42b) to pattern with (43b) in the relevant respect. On the other hand, the argument ellipsis analysis easily captures (42b), given that on this analysis (42b) contains an elided *sannin-no sensei-o*.

(42) a. Taroo-wa sannin-no sensei-o   sonkeisiteiru.
          Taroo-TOP three-GEN teacher-ACC respects
          'Taroo respects three teachers.'
      b. Hanako-mo   e sonkeisiteiru.
          Hanako-also   respects
          '(Lit.) Hanako respects e, too.'

(43) a. John respects three teachers.
　　 b. Mary respects them, too.
　　 c. Mary does, too.
　　　　(Şener and Takahashi 2009:3)

There is also an alternative ellipsis analysis, proposed by Otani and Whitman (1991) (based on Huang's (1987) analysis of Chinese), on which elliptic null object constructions actually involve full VP-ellipsis preceded by V-raising. Otani and Whitman base their analysis on examples like (44), where both the strict and the sloppy interpretation are possible.

(44) John-wa zibun-no tegami-o sute-ta;　　Mary-mo e sute-ta.
　　 John-TOP self-GEN letter-ACC discard-PAST Mary-also　discard-PAST
　　 'John threw out his letters, and Mary did too.'
　　 a. Mary threw out his (John's) letters, too. (strict interpretation)
　　 b. Mary threw out her (Mary's) letters, too. (sloppy interpretation)

(44) patterns in the relevant respect with English (46), which involves VP-deletion, rather than with (45), which involves a pronominal (but see also Elbourne 2001 for sloppy readings of pronouns).

(45) Peter likes his picture, and Joan likes it too.
　　 a.　Joan likes his (Peter's) picture, too. (strict interpretation)
　　 b. *Joan likes her (Joan's) picture, too. (sloppy interpretation)

(46) Peter likes his picture, and Joan does too.
　　 a. Joan likes his (Peter's) picture, too. (strict interpretation)
　　 b. Joan likes her (Joan's) picture, too. (sloppy interpretation)

However, Kim (1999) shows that there are contexts where the sloppy reading, which raises an issue for the pro analysis, is possible but VP-deletion is not. One of these contexts involves the Korean double accusative construction, illustrated in (47).

(47) a.　Mike-nun James-lul tali-lul ketechassta.
　　　　 Mike-TOP James-ACC leg-ACC kicked
　　　　 'Mike kicked James on the leg.'
　　 b. *Mike-nun tali-lul James-lul ketechassta.
　　　　 Mike-TOP leg-ACC James-ACC kicked

(47) shows that the order of the objects is fixed. What is important here is that the sloppy interpretation is possible even when the first accusative NP is null.

(48) a. Jerry-nun caki-uy ai-lul　　phal-ul ttayliessta.
　　　　 Jerry-TOP self-GEN child-ACC arm-ACC hit
　　　　 'Jerry hit his child on the arm.'
　　 b. Kulena Sally-nun e tali-lul ttayliessta.
　　　　 but　　Sally-TOP　leg-ACC hit

   a. But Sally hit his (Jerry's) child on the leg. (strict interpretation)
   b. But Sally hit her (Sally's) child on the leg. (sloppy interpretation)

If the null object in (48b) arose as a result of applying V-movement and VP-deletion, the deletion would have to affect the second object too, since this object is lower than the first object. The second object should then also be null.

Kim then concludes that the VP-deletion analysis cannot account for these examples. Additionally, Oku (1998) observes that what Otani and Whitman (1991) consider to be VP-deletion can only affect arguments; it cannot affect low adjuncts that are otherwise affected by VP-preposing, as indicated by the fact that Japanese (49b) can only mean that John did not wash a car (it cannot mean that John did not wash a car carefully).[16]

(49) a. Bill-wa   kurum-o teineini   aratta.
         Bill-TOP car-ACC   carefully washed
         'Bill washed the car carefully.'
      b. John-wa   e arawanakatta.
         John-TOP   not.washed
         '(Lit.) John didn't wash e.'

This also follows if the relevant ellipsis process involves argument ellipsis. There are other arguments for the argument ellipsis analysis in the literature; for these, see the references cited in the first paragraph of section 3.

Saito (2001) also adopts the argument ellipsis analysis, where (on Saito's implementation of the analysis) the antecedent of a null argument is actually present in place of the null argument, but is deleted in PF. Saito then analyzes the accusative intervention effect as another instance of repair by PF deletion, though different from the ones discussed here since under Saito's analysis the relevant examples do not involve a locality violation, but a Case violation. Saito assumes that nothing goes wrong in the syntax if an NP does not undergo Case checking. Rather, he assumes that such cases are ultimately ruled out in PF. In other words, Saito assumes that an NP that does not undergo Case checking induces a PF violation (in more traditional terms, Saito assumes that the Case Filter holds in PF). Following Lasnik's (1995) work on rescue by PF deletion, Saito then reasons that since a Case violation is a PF violation, it should be possible to repair it with PF deletion. This is then what happens in (38): the antecedent of e—namely, *Ziroo-o*—is actually present in the structure (in place of e) in (38), just as it is in (37). Both (37) and (38) then exhibit Case violations, since the accusative Case of *Ziroo-o* cannot be checked under Saito's assumptions. The difference between (37) and (38) is that the Case violation in (38) is rescued by deleting the offending element in PF so that no NP with an unchecked Case feature is present in the final PF

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[16] See also Hoji 1998 for arguments against Otani and Whitman's analysis. Saito (2007) shows that Hoji's arguments do not extend to the argument ellipsis analysis.

representation in (38), in contrast to (37), the crucial assumption being that Case violations are PF violations.[17]

Saito's analysis is quite interesting. However, it still faces several problems. One of them, pointed out by Saito himself, concerns the double-*o* effect. The causee in the Japanese causative construction can bear either dative (*-ni*) or accusative (*-o*) Case, as shown in (50a). However, as shown in (50b), when the embedded verb takes an accusative object, the dative *-ni* is the only option for the causee. It is standardly assumed that v can license only one instance of the accusative *-o*. The double accusative pattern in (50b) is then ruled out because it involves a Case violation: one of the accusatives cannot be checked.

(50) a. Hanako-ga   Taroo-ni/-o   Nagoya-ni   ik-ase-ta.
       Hanako-NOM Taroo-DAT/-ACC Nagoya-DAT go-make-PAST
       'Hanako made Taroo go to Nagoya.'
    b. Hanako-ga   Taroo-ni/*-o   biiru-o   nom-ase-ta.
       Hanako-NOM Taroo-DAT/-ACC beer-ACC drink-make-PAST
       'Hanako made Taroo drink beer.'

Importantly, the double-*o* effect also holds for null objects (see, e.g., Harada 1973, Shibatani 1973). This is unexpected under Saito's assumptions since it should be possible to save the Case violation in (50b) by deleting the object NP, as in (51). In other words, we would really expect Saito's account of the contrast between (37) and (38) to extend to (50)–(51) in such a way that both (37) and (50b) are saved by deleting the relevant accusative object, thus voiding the Case violation.[18]

(51) Ziroo-ga   kusuri-o   motteki-ta-node, Hanako-ga   Taroo-ni/*-o   e
     Ziroo-NOM medicine-ACC bring-PAST-since Hanako-NOM Taroo-DAT/-ACC
     nom-ase-ta.
     drink-make-PAST
     'Since Ziroo brought medicine, Hanako made Taroo drink it.'

The main issue raised by Saito's analysis, however, concerns the condition in (34b). The question is why checking of genitive absorbs accusative. The question is particularly salient given that

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[17] Following Harada (1971), Saito (2001) observes that a relative gap has no effect on the genitive subject.

(i) Taroo-ga/-no   e kat-ta   hon
    Taroo-NOM/-GEN buy-PAST book
    'the book that Taroo bought'

Perlmutter (1972) argues that Japanese relative clauses can involve a null pronoun instead of movement, citing the fact that Japanese relative clauses do not exhibit subjacency effects. As Saito notes, in order for his analysis of (38) to extend to (i), the null argument in (i) also must arise through argument ellipsis (i.e., PF deletion). The same holds for the alternative analysis proposed below.

[18] An anonymous reviewer notes that if Case violations can be voided by PF deletion of the offending NP, which is the crucial ingredient of Saito's (2001) analysis, we might incorrectly predict finding alternations like *That's the man (*who) it seemed to be sick*.

nominative/genitive and accusative are checked by different heads. In other words, (34b) really just restates the phenomenon to be accounted for. I will therefore propose an alternative account of the intervention effect on *ga/no* conversion, which is intended to explain the effect stated in (34a–b), and which will not extend the lack of the blocking effect of null objects on *ga/no* conversion to the double-*o* effect. It is worth noting here that the analysis will still be crucially based on Saito's insight that examples like (38) involve rescue by PF deletion. I will, however, depart from Saito in subsuming (38) under the cases discussed in section 2; I will treat it as another case where deletion of an intervener voids a locality violation.

   Three assumptions are crucial to the analysis to be proposed. First, I assume (following Miyagawa (1993) and Ochi (2001), among others) that the source of genitive Case assignment is in the nominal projection above the sentential modifier; this seems to me to be the simplest way to capture the fact that *ga/no* conversion is restricted to sentential modifiers (i.e., this seems to be the simplest way to account for the contrast between (31) and (32)). I will not, however, assume that *no*-licensing necessarily requires overt movement to the nominal projection since such licensing can also be done via the mechanism of Agree. Second, I assume the overt object shift analysis for Japanese (see Koizumi 1995, Ochi 2005, 2009), which means that accusative NPs move to Spec,vP. The movement takes place prior to the insertion of the external argument, which is then inserted into a lower Spec,vP, following Richards's (2001) tucking-in.[19] Third, I assume that -*ga* is not a real structural Case, a position for which there is a great deal of independent evidence, as demonstrated by Saito (1985) (see also, e.g., Bošković 2010a, Fukui 1986, 1988). This means that when NP-*ga* moves across a shifted object, the movement does not take place for Case reasons; hence, with NP-*ga* we would not expect to find an intervention effect of the kind discussed directly below with NP-*no*.[20]

   Turning now to NP-*no*, as discussed above, I assume that its Case licenser is located within the NP projection (it is in fact the noun)—that is, outside of the sentential modifier. I assume that quite generally, when an NP is not located in a position where it can enter into a Case-licensing relation with its Case licenser because of a locality problem (either a Phase Impenetrability Condition (PIC) locality effect or an intervention effect), the NP will move to a position where it can get Case-licensed.[21] This also holds for NP-*no*, which will then also move to a position where it can get Case-licensed. What we are dealing with here is movement that is driven by an uninterpretable feature of the moving element, namely, Case (for relevant discussion, see Bobaljik and Wurmbrand 2005, Bošković 2007, Franks and Lavine 2006, Surányi 2004). Since, after object shift, NP-*o* intervenes between NP-*no* and its Case licenser, blocking the Case-licensing relation,

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[19] The external argument will then not induce an intervention effect for movement of the object. Notice also that I do not adopt the stipulative mechanism of equidistance (Chomsky 1995).

[20] I leave open here the exact nature of this movement. I do, however, follow Ochi (2009) in assuming that *no*-phrases, which at the relevant point are still not Case-licensed (see below in the text), cannot undergo this movement.

[21] Elsewhere (Bošković 2007), I have argued that the PIC actually does not hold for Agree; if this is so, then only intervention effects would matter here. Notice also that even if the PIC were to hold for Agree, it is not clear that there would be a PIC effect in the relevant configuration.

NP-*no* then must move across NP-*o* to get closer to its Case licenser. Since the movement is Case driven, NP-*o*, which bears Case, counts as an intervener. This is then what is behind the blocking effect in (33a).

(52) Taroo-no hon-o* Taroo-no

It is worth noting here that Ochi (2009) presents an alternative account for the blocking effect of accusative objects on *ga/no* conversion that also treats it in terms of a locality violation.[22] Ochi's account does not require assuming that -*ga* is not a regular Case, but it does require adopting the concept of equidistance. Ochi also assumes overt object shift for Japanese, which means that NP-*o* always intervenes between NP-*ga/no* and its licenser (after the shift). Ochi assumes that -*ga* is licensed by T (the whole clause being a TP, not a CP) and that -*no* is licensed by a higher phase head, namely, D. It should be noted that elsewhere, I have argued that Japanese lacks DP (Bošković 2008b, 2010a) and that in languages without DP, NP acts as a phase (Bošković 2010b and briefly in Bošković 2010a). Since N then counts as a phase head, Ochi's analysis can easily be recast within this system, with N licensing -*no* (this analysis is actually somewhat simpler, since under the D analysis the question arises why the noun in the complement of D does not count as an intervener). Ochi adopts the concept of equidistance, where multiple specifiers of the same head count as equidistant; but following Chomsky's (2001) suggestion that the PIC locality effect kicks in only with the next phase head (not with any higher head), he crucially assumes that equidistance holds only up to the point in the derivation at which the next phase is introduced. As a result, a nonphase head T, which enters into a relation with NP-*ga*, can attract NP-*ga* across NP-*o*, since as multiple specifiers of the same head the two count as equidistant. However, equidistance becomes irrelevant once another phase head, D/N, which licenses -*no*, enters the structure. Movement of NP-*no* across NP-*o* then inevitably violates locality.[23]

What is important here is that under both the analysis presented above and Ochi's analysis, the blocking effect of NP-*o* is analyzed in terms of a locality violation. In other words, (52) applies to both. Recall now that under the argument ellipsis analysis of null arguments in Japanese, null objects, which do not induce an intervention effect (see (38)), arise through PF deletion. The lack of a blocking effect with null objects can now be easily captured. This is in fact just another case where PF deletion of an intervener voids a locality violation.

(53) Taroo-no ~~hon-o~~* Taroo-no

Since, as a result of object deletion, (53) does not contain any *-marked elements, the configuration in (53) is correctly predicted to yield a grammatical result (see (38)). We thus capture the fact that, in contrast to overt objects, null objects do not block *ga/no* conversion. The contrast has in fact been captured in exactly the same way as Ross's (1969) contrast in (1) and the contrast with

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[22] The discussion in the text slightly modifies Ochi's (2009) analysis.

[23] For details of the analysis, see Ochi 2009. I only note here that in Ochi's system, T does not act as a probe in examples without -*ga* and that genitive phrases cannot undergo scrambling, as shown by Saito (1985). (Note also that nothing changes in the equidistance analysis if *ga/no* subjects have the option of staying in situ; see Ochi 2009.)

respect to the experiencer blocking effect in (7). In each case, an overt element induces a locality violation, which is then repaired with the null element through PF deletion. Needless to say, to the extent that it is successful the account provides strong evidence for the argument ellipsis analysis of null elements in Japanese.[24]

Having captured the crucial contrast between (37) and (38), I turn now to the other data discussed in this section. (The following discussion is couched in terms of the analysis proposed above; see Ochi 2009 for discussion of how the data would be handled within his system.) Notice first that the grammaticality of (35) can easily be captured. Since NP-*no* undergoes Case-motivated movement, only Case-marked elements count as interveners; hence, an adverb does not induce an intervention effect. (39) can also be straightforwardly accounted for: the problem with (39) is that NP-*no* cannot be Case-licensed from the nominal projection across an intervening Case-marked element, *hon-o*.[25] Notice also that the problem does not arise in (54) since the intervening element is not Case-marked.

(54) kinoo   Taroo-ga/-no   it-ta   tokoro
     yesterday   Taroo-NOM/-GEN go-PAST   place
     'the place where Taroo went yesterday'

The reader can verify that (51) does not raise a problem for the current analysis, which does not require assuming that a Case violation can be fully repaired by deleting the NP with an unchecked Case in PF.

Finally, I briefly discuss some additional data. As is well known, stative predicates can take nominative objects in Japanese.

(55) Taroo-ga   purin-ga   suki-da.
     Taroo-NOM   pudding-NOM   like
     'Taroo likes pudding.'

If *ga/no* conversion applies in this context, the following construction results:

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[24] It is worth noting here that the above analysis is consistent with regarding Japanese to be a language that has both argument ellipsis and null pro. All we need is the possibility of argument ellipsis. However, under the mixed argument ellipsis/pro analysis we would expect that once the possibility of argument ellipsis is blocked, an intervention effect will reemerge. I leave exploring this option, which is not easy to test, for future research. (Note that Ochi (2009) does try to tease apart the argument ellipsis and the pro option with respect to *ga/no* conversion. However, the judgments for the relevant data are quite murky (difficult to elicit and subject to speaker variation), so I will not go into them here.)

I should also point out that Saito (2004) suggests that unlike sluicing in English, argument ellipsis in Japanese does not salvage Subjacency violations. However, Sugawa (2008) reanalyzes the relevant data in such a way that the relevant locality violation occurs in a conjunct that does not involve ellipsis (on a par with Fox and Lasnik's (2003) analyses of certain English constructions where ellipsis superficially appears to fail to repair a locality violation); as a result, the data in question do not undermine the claim adopted here that argument ellipsis should be able to repair locality violations on a par with other PF deletion operations.

[25] In other words, the problem here is not caused by the trace of the scrambling chain; rather, it is caused by the head of the chain.

(56) Taroo-ga/-no   purin-ga/-no   suki-na koto
     Taroo-NOM/-GEN pudding-NOM/-GEN like   fact
     'the fact that Taroo likes pudding'

The *ga-ga* and *no-ga* patterns are straightforward. As discussed above, I assume that NP-*ga* does not count as an intervener, since -*ga* is not a regular Case (in other words, NP-*ga* is more like an adverb than a structurally Case-marked element in this respect). Since NP-*no* can then be Case-marked across NP-*ga*, nothing goes wrong in the *ga-no* pattern. Finally, I assume that the *no-no* pattern involves Hiraiwa's (2005) multiple Agree, where the same Case licenser undergoes Agree with both instances of NP-*no*. As Hiraiwa discusses, application of multiple Agree voids locality effects. That is, elements that undergo multiple Agree do not induce intervention effects for each other; hence, the *no-no* pattern converges without problems.

　　In summary, I have argued that the blocking effect of accusative NPs on *ga/no* conversion should be analyzed in terms of a locality violation, a claim also made by Ochi (2009). The fact that null objects do not induce a blocking effect can then be seen as another instance of rescue by PF deletion, where a locality violation is saved by deleting the troublemaker in PF. The contrast between (37) and (38) then receives the same account as Ross's (1969) locality contrasts in (1), the contrasts in (7) regarding the experiencer blocking effect, and the contrast in (30b–c) regarding barrierhood. The current analysis follows Saito's (2001) insight that we are dealing here with a rescue-by-PF-deletion phenomenon. However, by casting the relevant violation in terms of locality of movement instead of Case, the current analysis fully unifies the *ga/no* conversion case with the rescuing effect of ellipsis and movement/traces on locality violations, and it avoids some problems that the Case approach faces. Most importantly, the stipulations in (34a–b) can now be dispensed with.

3.2 Argument Drop and Left Edges

As discussed above, the current analysis makes a clear prediction regarding null arguments that arise via PF deletion: such arguments should not count as interveners for relativized minimality effects. Argument ellipsis differs from pro in the relevant respect: in contrast to null arguments that arise through PF ellipsis, the null pronominal pro should still count as an intervener. (To be more precise, nothing proposed here would void the intervention effect with the traditional pro, in contrast to the situation found with argument ellipsis.) A serious problem with testing the above prediction is that it is very hard to determine the proper analysis for various null arguments crosslinguistically. Above, I have considered null arguments in Japanese, where an argument ellipsis analysis has strong independent motivation. I now turn to a case where the analysis is more controversial, my goal being simply to point out that if this is the right way to analyze the null arguments in question, some otherwise puzzling properties of the relevant construction can easily be explained in terms of a rescue-by-PF-deletion analysis.

　　The case in question concerns imperative subjects, another plausible instance of argument ellipsis. Many languages allow alternation between overt and null subjects in imperatives. This even holds for languages that otherwise do not have productive pro drop, which makes a pro

analysis of imperative null subjects for such languages difficult to maintain. I will therefore assume that the alternation in examples like (57) and (58) arises via PF deletion of the subject. Under this analysis, (57) and (58) differ in that the imperative subject is deleted in the PF of (58) (the fact that the construction does not violate Condition A indicates that a subject is syntactically present in (58)).

(57) You buy yourself a nice present!

(58) Buy yourself a nice present!

Sigurðsson and Maling (2008) discuss object drop in Germanic languages, which is illustrated for Icelandic and Swedish in (59)–(60), respectively, where dashes indicate the canonical object position.

(59) A: Hvað finnst þér um   nýja húsvörðinn?   (Icelandic)
          what think you about new janitor.the
      B: Veit é(g) ekki _____, hef é(g) ekki séð _____ enn.
          know I   not   have I   not seen   yet
          'I don't know (that), I have still not seen (him).'
          (Sigurðsson and Maling 2008:13)

(60) A: Vad tycker du om   den nya vaktmästaren?   (Swedish)
          what think you about the new janitor.the
      B: Vet   ja(g) inte _____, har   ja(g) fortfarande inte sett _____.
          know I   not   have I   still   not seen
          (Sigurðsson and Maling 2008:13)

Sigurðsson and Maling observe a very interesting restriction on null objects in Germanic languages: they are possible only with an empty Spec,CP. The relevant condition is given in (61), and the relevant examples are given in (62)–(64), where dashes again indicate the base position of the null object.

(61) *The Empty Left Edge Condition (ELEC)*
      The left edge of a clause [i.e., Spec,CP] containing a silent referential argument must be phonetically empty (in language or construction X).

(62) a. (Det) känner   ja(g) inte _____.   (Swedish)
      b. (Það) þekki   é(g) ekki _____.   (Icelandic)
          (that) recognize I   not
          '(Lit.) (That) I don't recognize e.'
          (Sigurðsson and Maling 2008:14)

(63) a. *Nu   känner   ja(g) inte _____.   (Swedish)
      b. *Núna þekki   é(g) ekki _____.   (Icelandic)
          now recognize I   not
          (Sigurðsson and Maling 2008:14)

(64) a. *Jag känner   inte ——.   (Swedish)
    b. *Ég þekki   ekki ——.   (Icelandic)
       I   recognize not
       (Sigurðsson and Maling 2008:14)

Sigurðsson and Maling analyze the data in terms of an intervention effect. Adopting a split CP,
they assume that there are context-linking elements Topic, Logophoric Agent/Speaker (ΛA), and
Logophoric Patient/Hearer (ΛP) above CP (i.e., above the projection where the initial element in
verb-second (V2) clauses is located; I will refer to the projection as *CP* for expository reasons)
and that null objects must enter into a licensing relation with these context-linking elements.
Slightly departing from their analysis, I assume that the licensing is accomplished via movement
of null objects to the specifiers of these projections. This immediately captures the intervention
effect. Since the movement obviously must be Ā-movement, it is blocked by an intervening
Spec,CP, as in (63) and (64).[26]

(65) [Top/ΛA/ΛP [$_{CP}$ *Spec* . . . [$_{IP}$ . . . Ø . . .
                  *
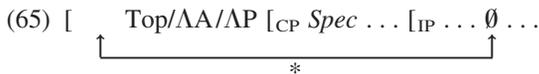
Notice also that, assuming that Spec,CP must always be filled in V2 clauses, the requirement in
question can be satisfied by the null object in (59)–(60) (see also Huang 1984), which will be
moving through Spec,CP on its way to the context-linking projections.

    Now, Sigurðsson and Maling observe that an overt subject blocks object drop in imperatives,
as illustrated by (66a) (to be compared with (66b), where the object is overt). They note that the
phenomenon can be subsumed under the ELEC if the overt subject in (66a–b) is located in
Spec,CP, with the verb moving to a higher projection in the split CP.

(66) a. Skerið (*þið)   —— í litla bita.   (Icelandic)
      cut.2PL (*you.PL)   in small pieces
      'Cut in small pieces.'
    b. Skerið (þið)   þau í litla bita.
      cut.2PL (you.PL) them in small pieces
      '(You) cut them in small pieces.'
      (Sigurðsson and Maling 2008:19)

Recall now that I have assumed that the overt/null subject alternation in imperatives is a result
of PF deletion (at least in languages that do not allow productive subject drop of the kind found

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[26] Sigurðsson and Maling (2008) treat the effect in question as a PF processing effect, which raises several issues.
As Sigurðsson and Maling themselves note, it seems strange to treat an intervention effect of the kind typically found
in syntax as a PF phenomenon. Also, we seem to be dealing here with an effect that has a semantic reflex (determining
the reference of the null object), which is tricky to capture in a PF analysis. Finally, if we were dealing here with a
processing effect, we might expect speakers to be able to ''recover'' from it, which does not happen. Nevertheless,
although I do not adopt the details of Sigurðsson and Maling's analysis, I do follow their main insight that we are dealing
here with an intervention effect.

in Spanish, for example, which is the case with the languages under consideration here). The overt and null subject options in (66) then differ in that on the latter option, the imperative subject is deleted in PF. But then we have a straightforward explanation for the contrast in (66a). In both cases, the null object moves to the context-licensing projections above CP, crossing Spec,CP, which induces a Relativized Minimality violation.

(67) a. *[Top/ΛA/ΛP [$_{CP}$ þið* [$_{IP}$ . . . Ø . . .

b.   [Top/ΛA/ΛP [$_{CP}$ ~~þið*~~ [$_{IP}$ . . . Ø . . .

However, the intervening element is deleted in PF on the null imperative subject option. Since no * is present in the final PF representation in (67b), (66a) is correctly predicted to be acceptable on the null imperative subject option. The contrast in question is then another instance of rescue by PF deletion, capturable in essentially the same way as Ross's (1969) original ellipsis/nonellipsis island contrasts.[27]

   To summarize, in this section I have presented several cases where it seems plausible to analyze null arguments as arising via PF deletion. What is important here is that such arguments do not count as interveners for relativized minimality effects. This is immediately explained under a rescue-by-PF-deletion analysis, which thus provides a uniform account of the rescuing effect of ''standard'' ellipsis, movement (i.e., traces), and argument ellipsis on locality violations.[28] In the next section, I will consider another phenomenon for which a rescue-by-PF-deletion analysis can profitably be employed, namely, the *that*-trace effect.

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[27] The English data in (i) can be accounted for in the same way if the imperative subject moves to an Ā-position, as Sigurðsson and Maling (2008) seem to assume. (That a null object requires a null subject in English imperatives was noted by Sadock (1974:600–601).)

(i) a.   Open carefully.
   b.   *You open carefully.
   c.   You open it carefully.

It is worth noting that Potsdam (1996) places English imperative subjects in Spec,TP. (However, most of his arguments only show that these elements cannot stay in Spec,VP; they do not necessarily show that they cannot move higher than Spec,TP.) An anonymous reviewer suggests that a nonuniform analysis of such elements may be in order, given the contrast between (ib) and *Don't anybody use without closing afterward*, where the null object appears to license a parasitic gap, indicating that it indeed undergoes Ā-movement, as assumed in the text.

[28] On the basis of object honorification and Case licensing in Japanese, Otaki (2009) argues that the current proposal that intervention effects (i.e., relativized minimality effects) with movement can be repaired by PF deletion of the intervener should be extended to Agree. He then adopts the current analysis for Agree, as in (i), where β is an intervener for the Agree relation between α and γ. Moreover, he shows that the relevant PF operation in (ib) can be either copy deletion, in the cases where β undergoes later movement above α (note that Otaki assumes one-cycle syntax), or argument ellipsis of β, which then yields a complete parallelism with the cases of Move discussed in this article.

(i) a.   α > β* > γ   Agree (α, γ)
   b.   α > ~~β*~~ > γ   Repair by deletion in PF

Since the extension to Agree has far-reaching consequences (see in this respect the data discussed in Boeckx 2009 and Baker's (1988) government transparency corollary effects), I leave exploring it for future research, simply referring the reader to Otaki 2009.

4 The *That*-Trace Effect

I now turn to the *that*-trace effect in English declarative complements, illustrated by the contrast in (68).

(68) a. *Who do you think that t left Mary?
    b.   Who do you think C t left Mary?

Starting with Perlmutter 1971, the *that*-trace effect generated a great deal of interest, particularly within the Government-Binding framework (see, e.g., Chomsky 1981, 1986, Kayne 1984, Lasnik and Saito 1984, 1992, Pesetsky 1981, Rizzi 1990). Interest began to wane with the onset of minimalism, likely because the effect was considered too hard to explain. More recently, though, minimalist accounts of the contrast in (68) have begun to emerge (see Boeckx 2008, Branigan 2005, Buesa García, to appear, Hoge 2001, Ishii 2004, Kim 2008, Lohndal 2009, Mizuguchi 2008, Pesetsky and Torrego 2001, Richards 2001, Rizzi and Shlonsky 2007, Roussou 2002, Szczegielniak 1999). I will not be concerned here with providing a detailed account of (68a). I will simply assume, following the majority of the literature on the topic, that locality of movement is responsible for the unacceptability of the construction, leaving open exactly how this is to be implemented.[29] What I will be concerned with is the contrast between (68a) and (68b). More precisely, my goal is to find a principled way to block whatever mechanism is used to rule out (68a) from applying to (68b).

    As noted above, following standard practice I assume that (68a) involves a locality violation. Whatever the precise implementation of the locality analysis is, it seems safe to assume that the troublemaker is the complementizer *that*. Following the approach to the locality of movement from sections 1 and 2, where in cases involving a locality-of-movement violation a * is placed on the troublemaker, a * is then placed on *that* when *who* moves to the embedded Spec,CP, crossing *that* in (68a). Since the * survives into PF, (68a) is then ruled out in PF following the general approach to the locality of movement from the above discussion.

(69) Who do you think [CP ~~who~~ that* ~~who~~ left Mary]?

What about (68b)? It has been extremely difficult to find a nonstipulative way of accounting for the contrast between (68a) and (68b). The reason for this is that locality has been standardly assumed to apply in the syntax, and the only clear principled difference between (68a) and (68b) is phonological, the complementizer being overt in (68a) and phonologically null in (68b). The current approach, where an aspect of locality is PF-based, makes possible a principled, nonstipula-

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[29] The example is standardly ruled out either as a movement violation or because the relevant movement leaves a trace that cannot be properly licensed. I am construing *locality of movement* here rather broadly, to involve both types of approaches; what is important for my analysis is that *that* is crucially involved in the locality violation.

    There is also a line of research that treats the *that*-trace effect as a PF effect (see, e.g., de Chene 1995, Kandybowicz 2006, 2008; see also footnote 36). I will argue in the text that we are indeed dealing here with a PF phenomenon, but on very different grounds from these works.

tive account of the contrast in question, which capitalizes on the PF difference between the two complementizers.

   I therefore assume that, just as the complementizer *that* causes a problem with respect to locality in (68a), so the null C causes a locality problem in (68b). This means that the null C should be *-marked after the subject *wh*-phrase crosses it in (68b), just as *that* is in (68a); see (70). This is certainly the null hypothesis, since it is hard to see why phonological overtness should matter to syntactic *-marking. In other words, in this manner we avoid stipulating a difference between *that* and C with respect to syntactic locality, which has been a problem for accounts that treat the contrast in (68) strictly in syntactic terms.

   (70) Who do you think [$_{CP}$ who C* [$_{IP}$ who left Mary]]?

Now, Pesetsky (1992) argues that the null C is a PF affix, which undergoes affixation to the higher verb. Ormazabal (1995) generalizes this analysis by arguing that all null heads are in fact PF affixes. Pesetsky implements the PF affix analysis for the null C through syntactic head movement of the null C affix to the verb, while Bošković and Lasnik (2003) implement it by assuming that the verb and the null C undergo PF merger. As a compromise between the two analyses, and following the general approach that places head movement in PF (see Boeckx and Stjepanović 2001, Chomsky 2001), I will assume that the null C moves to the verb in PF, undergo-ing affixation this way.[30] Notice now that under a Pesetsky-style analysis, what intervenes between the copy of *who* in the embedded Spec,CP and the copy in Spec,IP is in fact a trace—more precisely, a trace of C. (68b) then may be another instance of (6), where turning an intervener (i.e., an element that causes a locality violation) into a trace rescues a locality violation.[31]

   Since the goal of this article is to deduce (6), let us consider the derivation of (68b) more closely, picking it up at point (70), which is its overt syntax structure. In PF, the null C undergoes affixation to the verb. The question now arises whether the * on the null C should be copied under C-to-V movement. In section 2.3, I discussed three possibilities regarding *-copying under movement for constructions involving complex heads. Regardless of which option is chosen, the head of the null C movement chain will not be *-marked. Recall the options discussed in section 2.3. One analysis was based on the assumption that the morphological process that turns a clitic and its host into one morphological element eliminates *s. The process should also occur in the case of affixation and should then eliminate the * on the head of the null C movement chain. The second analysis considered in section 2.3, which treats head movement as PF movement, was based on the assumption that *-creation is a syntactic mechanism, hence does not apply to PF movement. Under this analysis, the head of the null C movement chain would not even get

[30] Two of the options to be considered in the text are actually also compatible with the C-movement-in-syntax analysis.
   [31] Regarding the term *relativized minimality* from (6), I am using it here loosely for cases where the intervener c-commands (rather than dominates) the original movement site and where the intervener does not block all movement, as rigid islands do. In this sense, *that* counts as an intervener for the purpose of (6) (see also the discussion below in the text).

a *. Finally, under the third analysis it is not even necessary to assume that null C movement takes place in PF; nothing would change if it takes place in the syntax (the same actually also holds for the first option). This third analysis was based on a distinction between troublemakers that are sensitive to the kind of movement that crosses them and those that are not. In the syntax, sensitive troublemakers get a mark indicating the kind of movement they cause a problem for, and the * is copied only if the troublemaker undergoes this kind of movement. Nonsensitive troublemakers always copy *s under movement. In section 2.3, I compared relativized minimality interveners and rigid islands in the relevant respect. The former are sensitive to the type of movement that crosses them, hence copy *s only if they undergo the right type of movement, while the latter are insensitive troublemakers that block all movement, hence always copy *s. In the *that*-trace effect, the troublemaker is even more sensitive than typical relativized minimality interveners. It does not even create a problem for all Ā-movement, only for subject Ā-movement. It should then be considered a sensitive troublemaker, which is marked to indicate the type of movement it causes a problem for. It is not important here exactly how this marking is to be implemented, since it is clear that the affixation movement of the null C to V is not of the same type; hence, the * should not be copied. Regardless of which option from section 2.3 is chosen, we then end up with the structure in (71).

(71) Who do you C+think [CP who C* [IP who left Mary]]?

At this point copy deletion applies, deleting all copies that are not heads of chains.[32]

(72) Who do you C+think [CP who̶ C̶*̶ [IP who̶ left Mary]]?

Since no *-marked element remains in the final representation, (72) does not involve a locality violation, in contrast to (69).

Under the above analysis, there is no need to posit any difference between *that* and the null C with respect to syntactic locality; they both raise a locality problem for subject *wh*-movement. Adopting Pesetsky's (1992) C-to-V movement analysis, I have analyzed the grammaticality of (68b) as another instance of (6), extending to (68b) the rescue-by-PF-deletion account of the generalization in (6).

The rescue-by-PF-deletion analysis explains another rather interesting and puzzling fact regarding the *that*-trace effect. In particular, the analysis provides a principled explanation for the adverb intervention effect noted by Bresnan (1977:194) (see also Culicover 1992), where intervening adverbials mitigate *that*-trace effects, as shown in (73). ((73b) is taken from Culicover 1992:98.)

(73) a. *Robin met the man who Leslie said that t was the mayor of the city.
b. Robin met the man who Leslie said that for all intents and purposes t was the mayor of the city.

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[32] I assume that copy deletion applies to all chains, regardless of whether we are dealing with phonologically overt or null elements.

I will adopt here the CP-recursion analysis of such constructions. In particular, I adopt the analysis proposed in Watanabe 1993b, also argued for in Browning 1996, whereby *that* is generated in the lower CP and then undergoes movement to the higher CP.

It is then easy to see why, in contrast to (73a), (73b) is grammatical. We are in fact dealing here with another instantiation of (6) (see also footnote 31), where turning an intervener into a trace ameliorates a locality violation. Like other cases of (6) discussed above, the amelioration effect in (73) receives a straightforward PF deletion account. The *wh*-phrase in (74) crosses *that* while *that* is still located in the lower CP. As in other cases of the *that*-trace effect, *that* receives a * as a result of this movement. *That* then undergoes movement to the higher CP. However, the * is not copied under this movement for reasons discussed above.[33] When copy deletion applies, the lower copies of the *wh*-phrase and *that* are deleted. Since no * remains in the final representation, the grammaticality of the construction is correctly captured.[34]

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[33] This holds under all three options discussed in the text, which means that it does not really matter whether the movement in question is assumed to take place in the syntax or PF.

   Notice that the higher copy of *that* should not cause a problem by itself since, as is well known (see, e.g., Lasnik and Saito 1992), the *that*-trace effect arises only with the first step of subject Ā-movement; it does not arise with object movement, adjunct movement, or later steps of subject movement.

[34] I assume that the second lowest trace of the *wh*-phrase is located in the specifier of the lowest CP, with the adverb being adjoined to this CP. This way, we may be able to capture the fact that crossing the adverb in such constructions apparently does not yield a locality (i.e., Relativized Minimality) violation, as the full acceptability of (73b) and (i) shows.

   (i) Which book did Leslie say that for all intents and purposes John coauthored with Mary?

I will not have much to say here about nonadverbial topicalization owing to the controversy about the relevant judgments. Nonadverbial topicalization appears not to rescue *that*-trace effect violations, though there is some controversy about this in the literature (Culicover (1992) gives some examples he claims to be acceptable). Note that there is a potentially interfering factor here. Movement of the topic across the subject *wh*-phrase in (ii) may result in a Relativized Minimality violation, a problem that does not arise with adverbs, which may be base-generated in their surface position.

   (ii) *Who did Robin say that this present, gave Lee?
         (Browning 1996:250)

There is also a controversy about whether there are topic islands (i.e., whether movement across an argumental topic is allowed). Culicover (1996) claims that such extraction is in principle possible, while (citing examples like (iii)) Lasnik and Saito (1992) claim that it is not.

   (iii) ??Which problem do you think that Mary, Bill told that John solved?
          (Lasnik and Saito 1992:98)

If the general pattern is as reflected in the judgments in (ii)–(iii), it could be captured by assuming that a nonadverbial topic is actually located in Spec,CP (preventing the subject from moving through this position), so that crossing of the topic induces a locality violation. The violation is more severe in (ii)—another illustration of the well-known fact that a locality violation with the first step of subject *wh*-movement yields a stronger violation than a locality violation with object movement or subsequent steps of subject movement, however this is to be captured. It is worth noting here that Browning (1996) actually argues that nonadverbial topicalization involves CP-recursion, but, contra Watanabe (1993a,b), she argues that such cases do not involve *that*-movement. This analysis can also be incorporated into the current system, since under this analysis (ii) does not fall under the generalization in (6) (i.e., the lower CP is not headed by a trace, hence is not affected by copy deletion). The analysis is, however, incompatible with the alternative account of the *that*-trace effect discussed below. (Recall, however, that according to Culicover (1996), argumental topicalization may actually not differ from adverb topicalization in the relevant respect, putting aside the interfering factor noted above with respect to (ii), so it is not clear that there is an issue here.) It is also worth noting that Browning shows that negative adverbials that normally trigger inversion fail to trigger it when the subject is moved, which means that examples with negative adverbials are also compatible with *that*-movement.

(74) Robin met the man who Leslie said [$_{CP}$ that$_i$ [$_{CP}$ for all intents and purposes ~~who$_j$~~ ~~that$_i$~~*
[$_{IP}$ ~~who$_j$~~ was the mayor of the city]]].

To summarize, we have seen that under Pesetsky's (1992) C-to-V movement analysis, the grammaticality of (68b) can be analyzed as another instance of the generalization in (6), which can be captured under the rescue-by-PF-deletion account of (6). I have shown that the adverb amelioration effect in (73) can also be subsumed under the generalization in (6) and treated in terms of rescue by PF deletion under Watanabe's (1993b) CP-recursion analysis of such constructions, where *that* undergoes movement. What improves a Comp-trace violation in both (68b) and (73b) is the movement of the troublemaker. The reason for the amelioration is that the original problematic copy is deleted in PF under ''standard'' deletion of lower copies.[35]

There is also an alternative rescue-by-PF-deletion analysis that retains the assumption that (68a) involves a locality violation. The gist of this analysis was in fact suggested by An (2007a) in a way that is not quite compatible with the current *-marking system. I will therefore implement the analysis within this system, following An's insight. The analysis is based on a revival of Chomsky and Lasnik's (1977) proposal (see also Perlmutter 1971) that (76a) is derived from (75) via deletion of *that*, as shown in (76b). Following the current approach to deletion and extending the current PF update of Chomsky's (1972) condition barring *s to *that*-deletion, I will assume that the deletion is a PF phenomenon.[36]

(75) Mary thinks that John left.

(76) a. Mary thinks John left.
b. Mary thinks ~~that~~ John left.

It is now easy to see why, in contrast to (68a), (68b) is acceptable. Consider first (68a). As discussed above, when the subject *wh*-phrase crosses the complementizer, the complementizer is *-marked, following the approach to the locality of movement adopted here, where in cases involving a locality-of-movement violation a * is placed on the troublemaker. Since the * survives into PF in (68a), as shown in (69), which gives the structure following copy deletion, the example is then ruled out in PF following the general approach to the locality of movement from the above discussion. Now consider (68b). Recall that on the analysis currently pursued, following Chomsky and Lasnik (1977), (76a) is derived from (75) via deletion of *that*, with the deletion applying in PF. The same should hold for (68b): (68a) and (68b) then have exactly the same syntax, but (68b) involves an additional step of PF deletion of the complementizer *that*.

(77) Who do you think ~~that*~~ t left Mary?

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[35] Browning (1996) accounts for the amelioration effect in (73) essentially by stipulating that in contrast to the overt complementizer *that*, its trace can bear an index, hence can license the subject *wh*-trace in Spec,IP. The current analysis provides a principled explanation for the fact that the trace of *that* behaves differently from *that* with respect to the Comp-trace effect.

[36] An (2007b), Franks (2005), and Kim (2008) also argue that the alternation in (75)/(76a) should be analyzed in PF terms; however, their approaches differ from the current one in assuming that *that* is inserted in the PF of (75) (instead of assuming that it is deleted in the PF of (76a), as I do here).

Since the deletion removes the *-marked element, *that*, there is no locality violation in (68b). The contrast in (68) thus receives a principled account.

It is worth emphasizing that the analysis does not require positing any syntactic differences between (68a) and (68b), which should be considered an argument in its favor given that coming up with a principled nonstipulative syntactic difference between (68a) and (68b) has proven extremely difficult. The PF deletion analysis capitalizes on the obvious PF difference between the embedded complementizers in (68a) and (68b), the complementizer being overt in (68a), but not in (68b). One aspect of the *that*-deletion analysis is worth noting, however. Given Recoverability of Deletion, the analysis is based on the assumption that the deleted *that* is essentially semantically null; otherwise, its deletion would violate Recoverability of Deletion. Franks (2005) (see also Hegarty 1992) indeed argues that the deleted *that* is similar to the *do* of *do* support in this respect. A natural extension of this analysis would be to argue that at least in some cases where *that* cannot be deleted, *that* does have semantic import; hence, its deletion would violate Recoverability of Deletion. Hegarty (1992) pursues this line of research, suggesting that the complementizer *that* in fact has semantic import in all and only the cases where *that* in the complement of a verb cannot be deleted.

Another potentially relevant phenomenon from this perspective involves the well-known fact that the complementizer *that* is obligatory with embedded topicalization.

(78) a.   John didn't believe that Mary, Bill kissed.
     b.   *John didn't believe Mary, Bill kissed.

Recall that Watanabe (1993b) analyzes topicalization examples like (78a) as involving CP-recursion, with *that* generated in the lower CP and then undergoing movement to the higher CP. Under this analysis, *that* can be taken as a marker of CP-recursion, which plausibly blocks the deletion of *that* since the deletion would affect recoverability of the CP-recursion structure. (This is in fact what Watanabe (1993b) suggests.) Given that under the analysis in question, (78b) underlyingly has *that* in the embedded clause, with *that* undergoing deletion, we then may have an account of the ungrammaticality of this construction.[37]

Finally, returning to the amelioration effect of PF deletion, note that Perlmutter (1971) and Merchant (2001) observe that *that*-trace violations can also be rescued by ellipsis.

(79) a.   *It's probable that a certain senator will resign, but which senator it's probable that
          t will resign is still a secret.
     b.   It's probable that a certain senator will resign, but which senator [it's probable that
          t will resign] is still a secret.
          (Merchant 2001:185)

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[37] An avenue that can be explored under Pesetsky's (1992) C-to-V analysis, which assumes the existence of a null C that however undergoes affixation to V (in contrast to *that*), is a potential incompatibility between the recursion structure and the C-affixation movement (in other words, the option to explore is that the recursion creating movement cannot be followed by C-to-V affixation).

This is not surprising in the overall approach to the locality of movement adopted here. In fact, the amelioration effects in (68) and (79) receive essentially the same account.

I conclude therefore that the contrast in (68) is amenable to a rescue-by-PF-deletion analysis.[38] The rescue-by-PF-deletion analysis of (68) does not require positing two different complementizers that would differ regarding whether they raise a problem with respect to the locality of movement—an argument in favor of the analysis given that accomplishing this in a nonstipulative way has proven extremely hard in previous work. Under the rescue-by-PF-deletion analysis, the embedded complementizer raises a problem for subject *wh*-movement in both (68a) and (68b), the violation being rescued in (68b) via PF deletion. It is worth noting here that the rescue-by-PF-deletion account does not require any new assumptions (it simply makes use of assumptions already made in the literature for independent reasons) and that it does not really depend on the exact implementation of the locality violation in (68a) (any analysis that considers the complementizer the troublemaker will do). Once we adopt the locality approach to (68a) and either Pesetsky's (1992) C-affixation or Chomsky and Lasnik's (1977) *that*-deletion analysis, the contrast in (68) immediately follows as another instance of rescue by PF deletion. In other words, (68) is now unified with the amelioration effects in (1)–(3); (7a)/(7b–c); (9); (30b–c); (37)–(38); and (66a): all these contrasts represent cases where a locality violation is rescued by PF deletion. We have also seen that the rescue-by-PF-deletion analysis can be extended to account for the adverb amelioration effect, another case where a locality violation is rescued by PF deletion.

5 Conclusion

To sum up, we have seen that the rescue-by-PF-deletion account of the amelioration effect of island violations under ellipsis can be extended to account for the *that*-trace effect (including the adverb amelioration effect) and the lack of intervention effects with certain null arguments that are otherwise found with their overt counterparts. Additionally, it can be extended to deduce the generalization that traces do not count as interveners for relativized minimality and the generalization that traces as heads of islands void islandhood, which raise a serious problem for the copy theory of movement, in a way that is fully consistent with the copy theory of movement. The fact that the rescue-by-PF-deletion approach has enabled us to unify a number of previously unrelated phenomena should be taken as a strong argument in its favor as well as an argument for the view of locality of movement on which this approach is based, which is partly derivational (*-marking takes place derivationally) and partly representational (the ultimate violations are determined representationally). I have also shown that the current extension of the rescue-by-PF-deletion approach, on which the rescue can take place not only through the deletion process involved in ellipsis but also through regular copy deletion, accounts for the different behavior of the Superiority Condition and the *Wh*-Island Condition with respect to the amelioration effect

[38] For an extension of the current account of the *that*-trace effect to the Spanish recomplementation (i.e., double complementizer) construction, see Villa-García, in preparation.

under ellipsis, a surprising difference in light of the fact that both of these are generally subsumed under relativized minimality effects in current research. I have also made several proposals regarding the precise implementation of the *-marking mechanism and placement of *s.

Finally, a remark is in order regarding an intriguing proposal made by an anonymous reviewer. Following standard practice in the literature, I have simply assumed that a * cannot be present in the final PF representation, leaving open why this is the case. The reviewer makes a specific proposal regarding this issue. The reviewer suggests that there is a filter that rules out pronunciation of *-marked elements, the intuition here being that pronunciation does not know what to do with a * on an element it is trying to pronounce. The upshot is that while phonologically overt elements cannot be *-marked, null elements can be (since they are not pronounced). Most of the discussion in this article would remain unchanged if this approach were adopted. However, there would be some differences. In section 4, I presented two alternative analyses of the *that*-trace effect: one that assumes the existence of a null C in the syntax (the null-C-affixation analysis) and one that does not (the *that*-deletion analysis). The reviewer's proposal would not affect the latter analysis, but it would simplify the former. There would be no need for C-to-V affixation to eliminate the * (the affixation is needed in the system adopted above since as a result of the affixation the * is located on a ''trace''—that is, a deleted copy); under the reviewer's proposal, a * on a null C simply would not raise any problems in PF since the element in question would not be pronounced. The discussion of the null argument cases investigated in section 3 also would not be affected; however, the reviewer's proposal would make a much stronger prediction regarding null arguments than the system adopted in section 3. While that system predicts that intervention effects will be voided with null arguments that arise via argument ellipsis, the reviewer's suggestion predicts that intervention effects should be voided with all null arguments, including pro, PRO, and null operators. At first sight, it appears that the prediction is too strong. For example, if the *wh*-island effect with yes/no questions is due to the presence of a null operator in the interrogative Spec,CP, (80) would raise a problem for the null-elements-as-noninterveners account.

(80) ??What do you wonder [$_{CP}$ Op if John bought]?

However, it is not clear that this is the right way to analyze (80), and alternative accounts might be available for other cases that appear to raise problems for the approach in question. Since it is beyond the scope of this article to conclusively settle this issue, I will leave it open here.

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