

Island Repair, Non-repair and the Organization of the Grammar

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I. Persistence of (some) syntactic constraints under ellipsis

- (1) Under ellipsis, obedience to (at least certain) syntactic constraints persists.

P-stranding

- (2) Merchant (2001) massively documents conformity to the parametric prohibition of P-stranding. In languages that allow P-stranding (such as English), the survivor of Sluicing can be the bare object of a preposition; in languages that don't (such as Greek) it can't.
- (3) Anna was talking with someone, but I don't know who
(4) Who was Anna talking with
- (5) I Anna milise me kapjon, alla dhe ksero *(me) pjon
the Anna spoke with someone but not I.know with who
- (6) *Pjon milise me
who she.spoke with
- (7) As reported by Merchant, other languages that behave like English are Frisian, Swedish, Norwegian, Danish, and Icelandic.
- (8) Languages like Greek that don't allow P-stranding are much more common. Merchant gives data from seventeen additional languages patterning with Greek, including German, Russian, Persian, Catalan, Hebrew, and Basque.

Superiority

- (9) Another movement constraint that seems to be maintained under Sluicing is Superiority (though there are possibly interfering factors - see Grebenyova (2006) for discussion).
- (10) Stjepanovic (2003), developing ideas of Boskovic (2002), discusses several properties of wh-movement in Serbo-Croatian, a multiple wh-fronting language. One property is apparent presence of Superiority effects, as seen in the following example from Boeckx and Lasnik (2006).
- (11) Ivan i Marko ne znaju ...
Ivan and Marko neg know
a. ko je šta kupio
who is what bought
'Who is buying what?'
b. *šta je ko kupio
what is who bought
'Ivan and Marko don't know who bought what'
- (12) This effect is preserved under Sluicing:

- (13) A: (Somebody bought something, but)
 B: a. Ivan i Marko ne znaju ko šta
Ivan and Marko neg know who what
 b. *Ivan i Marko ne znaju šta ko
Ivan and Marko neg know what who
 ‘but Ivan and Marko don’t know who what’
- (14) Merchant gives similar examples from Bulgarian, another multiple wh-fronting language.
- (15) a. Koj kogo e vidjal
who whom AUX seen
 ‘Who saw whom?’
 b. *Kogo koj e vidjal
- (16) a. Njakoj e vidjal njakogo, no ne znam koj kogo
someone AUX seen someone but not I.know who whom
 b. *Njakoj e vidjal njakogo, no ne znam kogo koj
- (17) This is all exactly as one would expect under a single cycle model of grammar (the multiple Spell-Out of Uriagereka (1999) for example).
- (18) At the end of each cycle (or at each phase; the precise instantiation doesn't matter), the structure so far created is 'shipped off' to the interfaces. In case there is some violation, external systems of mind then interpret the object as malformed.

Island non-repair

- (19) Merchant presents data indicating that (some) island violations also persist under ellipsis, VP ellipsis this time:
- (20) *They want to hire someone who speaks a Balkan language, but I don't know which they do [_{VP} want to hire someone who speaks *t*] Merchant (2001)
- (21) Again, this seems to be just what is expected in a single cycle model.

II. Repair of syntactic constraints

Islands

- (22) Ross (1969) already noted a phenomenon that is problematic for such a model - island violation repair under sluicing:
- (23) I believe that he bit someone, but they don't know who (I believe that he bit)
- (24) a. *I believe the claim that he bit someone, but they don't know who I believe the claim that he bit [Complex NP Constraint, noun complement]
 b. (??)I believe the claim that he bit someone, but they don't know who
- (25) a. *Irv and someone were dancing together, but I don't know who Irv and were dancing together [Coordinate Structure Constraint]
 b. (??)Irv and someone were dancing together, but I don't know who

- (26) a. *She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends she kissed a man who bit [Complex NP Constraint, relative clause]
 b. (??)She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends
- (27) a. *That he'll hire someone is possible, but I won't divulge who that he'll hire is possible [Sentential Subject Constraint]
 b. (??)That he'll hire someone is possible, but I won't divulge who
- (28) Based on this phenomenon, Ross explicitly argued against strictly monotonic cyclic derivation:
- (29) The phenomenon of island violation repair provides "evidence of the strongest sort that the theoretical power of [global] derivational constraints is needed in linguistic theory..." [p.277]
- (30) If a node is moved out of its island, an ungrammatical sentence will result. If the island-forming node does not appear in surface structure, violations of lesser severity will (in general) ensue. [p.277]

A related problem

- (31) Wasow (1972) already observed a potential problem (presented in somewhat different terms) for a one cycle model if ellipsis is instantiated by deletion. In this case, as in several others to be discussed, it seems that deletion is 'too late' to have the effects it evidently does.
- (32) a. John will come if Bill comes
 b. John will come if Bill does
- (33) Wasow's point was that on the embedded cycle, Affix Hopping would apply. When VP deletion later operates, no stranded affix remains, so do would not be inserted.
- (34) The phenomenon of 'repair by deletion' raises a host of similar problems.

Repair of failure to perform obligatory movement

- (35) Speaker A: Mary will see someone.
 Speaker B: I wonder who ~~Mary will see~~.
- (36) The construction is standardly plausibly analyzed as WH-movement followed by IP ellipsis (essentially Ross's account, taken up again by Saito and Murasugi (1990) and Merchant (2001).)
- (37) Sluicing is not limited to embedded questions. It can also occur in matrix wh-questions:
- (38) Speaker A: Mary will see someone.
 Speaker B: Who ~~Mary will see~~?
- (39) The relevant fact here is that the normally obligatory raising of Infl to C (in matrix interrogatives) does not apply:
- (40) a. *Who Mary will see?
 (41) b. Who will Mary see?

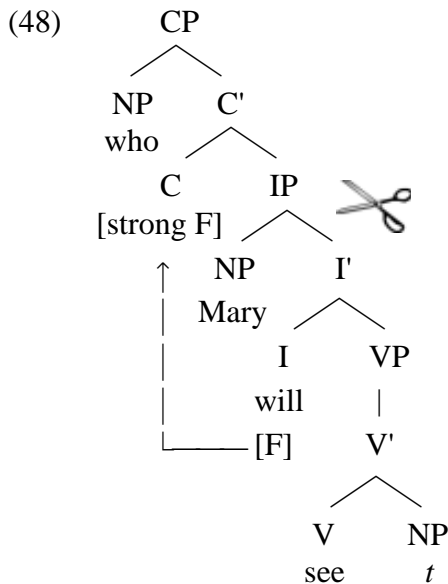
Possible analyses of these phenomena:

Islands

- (42) As mentioned above, Ross had already argued that we need a strongly non-Markovian model to capture the facts.
- (43) Chomsky (1972) rejects global derivational constraints, and suggests that * (# in Chomsky's presentation) is assigned to an island when it is crossed by a movement operation. An output condition forbidding * in surface structures accounts for the deviance of standard island violations.
- (44) If a later operation (Sluicing in the example Chomsky discussed) deletes a category containing the *-marked item, the derivation is salvaged.
- (45) For Chomsky, the condition banning * applies at surface structure. The results are the same if, instead, it is a PF condition, as suggested by Lasnik (1995a), Lasnik (2001a).

Failure to move

- (46) Assume that matrix interrogative C contains the strong feature that triggers the overt raising of T, with the matching feature of Infl (presumably a tense feature) raising overtly to check it.
- (47) Now, as proposed by Lasnik (1999) roughly following Ochi (1999), suppose that this leaves behind a phonologically defective Infl, which will cause a PF crash unless either pied-piping or deletion of a category containing that Infl (sluicing) takes place.
- (48) illustrates the latter option.



- (49) Wasow's problem evidently arises again under these accounts. Deletion seems to be too late to rescue the violations.
- (50) At this point, it is worth considering whether an even more fundamental problem arises. If material is cyclically 'shipped off' for interpretation at the interfaces, and deletion is late, then deletion is even too late to be deletion!

- (51) The solution to this last problem will suggest a direction for the others. 'Shipping the representation off' for interpretation cannot mean that it is actually interpreted at that point; just that it is made ready for interpretation with relevant properties presented.
- (52) The ultimate interpretation it receives can be as silence.
- (53) For Wasow's problem, one compatible approach would be that suggested in Lasnik (1981) and Lasnik (1995b).
- (54) a. Affix Hopping is merely low level regrouping of an adjacent affix and verb.
b. do-Support merely reflects how Infl is phonologically realized when it has not been merged into a verb.

III. Some approaches to island constraints and repair by deletion:

- (55) **Multiple Spell Out** (Uriagereka (1999)): Assume the first step of Kayne's LCA
a. If A c-commands B then A precedes B (defined on terminals).
- (56) Then for complex A, SO 'flattens' the structure C that contains A and c-commands B, destroying internal phrasal boundaries. This essentially turns C into a terminal and allows it to linearize via (55)a.
- (57) This deduces many islands (basically all non-complements).
- (58) Now suppose this flattening is optional. If it is not done, extraction will be possible, but, of course, linearization will ultimately fail (as the cycle demands that there will be no later opportunity to flatten).
- (59) But it won't fail if the problematic material is rendered invisible to phonetics. Thus, repair of (at least these) islands by deletion.
- (60) **Fox and Pesetsky (2003)** propose that at each spell-out domain, linear ordering statements are added to an ever growing Ordering Table.
- (61) When movement does not proceed from each successive phase edge, contradictory ordering statements ultimately appear in the Table.
- (62) When deletion takes place, it can have a salvation effect by eliminating all statements involving deleted material, including the contradictory statements that can result from moving too far in one jump. Island violation repair is one such situation.
- (63) So what of the failure of VP deletion to repair island violations, as in (55)?
- (64) Lasnik (2001b) points out that the generalization is actually stranger even than that, at least at first blush.
- (65) Parallel 'failure of repair' obtains even when there was no violation in the first place.
- (66) Extraction out of an embedded clause is typically fine and Sluicing is just as good, but VPE is bad:
- (67) They said they heard about a Balkan language, but I don't know which Balkan language they said they heard about
- (68) They said they heard about a Balkan language, but I don't know which Balkan language
- (69) *They said they heard about a Balkan language, but I don't know which Balkan language they did
- (70) Similarly for extraction out of an object NP:

- (71) They heard a lecture about a Balkan language, but I don't know which Balkan language they heard a lecture about
- (72) They heard a lecture about a Balkan language, but I don't know which Balkan language
- (73) *They heard a lecture about a Balkan language, but I don't know which Balkan language they did

The nature of Sluicing (based on Fox and Lasnik (2003))

- (74) Fred said that Mary talked to a certain girl, but I don't know which girl <~~Fred said that Mary talked to t~~>
- (75) Suppose, following Chung et al. (1995), that the indefinite in the antecedent of Sluicing must be bound by existential closure in a way that is parallel to the wh-dependency in the sluiced clause
- (76) And suppose, contra Merchant (2001), that formal parallelism is required for ellipsis. This is satisfied since the variables in the antecedent and the elided clause are bound by parallel operators and from parallel positions.
- (77) Now notice that in the structure shown, there are no intermediate traces in the elided portion (in angle brackets), indicating that there were no intermediate landing sites in the movement.
- (78) If there had been successive movement, under plausible assumptions the relevant portions of the antecedent and the ellipsis site would not be parallel, and this would prevent ellipsis.
- (79) a. This seems to be problematic under the assumption that successive cyclic movement is required by considerations of locality.
b. But as discussed earlier, considerations of locality are nullified under deletion (island repair).
- (80) But why is there no 'repair' with VPE?
- (81) VPE involves deletion of a smaller constituent than the clause that is elided in sluicing (VP vs. TP):
- (82) which girl [_{TP} he T [_{AspP} did <_{VP} ~~say that I talked to g(girl)~~>]]
- (83) *Fred said that Mary talked to a certain girl, but I don't know which girl he did
- (84) The unacceptability of VPE follows if we assume that one of the two remaining maximal projections, AspP or TP, is an 'island' that must be circumvented by adjunction or repaired by deletion. [This roughly follows the claim of Chomsky (1986) that all XPs are potential barriers.] Since the island is not deleted, the escape hatch is required, and a violation of Parallelism is unavoidable.
- (85) Under the Fox and Pesetsky proposal, at least some contradictory ordering statements will appear in the Table even after VP ellipsis.
- (86) Since this account of the contrast between VPE and sluicing relies crucially on the fact that there is movement in the elided constituent but not in the antecedent constituent, a prediction is that if the antecedent clause is replaced with a clause that involves movement, both VPE and sluicing would be possible.

- (87) a. I know which book John said that Mary read, but YOU don't know which one
 b. ?I know which book John said that Mary read, but YOU don't know which one he did.

Compare:

- (88) a. I know that John said that Mary read a certain book, but I don't know which one.
 b. *I know that John said that Mary read a certain book, but I don't know which one he did.

IV. Non-PF constraints

- (89) Cases of true non-repair should involve constraints that do not have their roots in PF properties.

Superiority

- (90) Merchant makes just that claim about Superiority, suggesting that it is a constraint on **derivations** rather than on output. The Minimal Link Condition of Chomsky (1995) has this property, as does its forerunner, Shallowness of Oka (1993).

LF locality

- (91) LF constraints should similarly not be repairable by deletion.

Long adjunct movement

- (92) As pointed out by Huang (1982) and later discussed by Lasnik and Saito (1984), adjunct movement displays very strong island effects:
 (93) *How did [Mary meet [a student [who solved the problem t]]]
 (94) These violations seem to persist under deletion:
 (95) *Mary met a student who solved the problem (somehow), but I'm not sure exactly how [Mary met [a student [who solved the problem t]]]

COMPARE

- (96) *Which problem did Mary meet a student who solved
 (97) Mary met a student who solved a problem, but I'm not sure exactly which problem
 (98) If we follow Huang and L&S in treating this locality of adjunct movement as an LF effect, failure of repair follows.

Sprouting

- (99) Chung et al. (1995) and Chung et al. (2006) observe that locality violations persist under Sprouting (Sluicing where there is no antecedent for the wh-trace).
 (100) *Sandy was trying to work out which students would speak but she refused to say who to/to who(m)
 (101) *Agnes wondered how John could eat, but it's not clear what
 (102) *That Tom will win is likely, but it's not clear which race
 (103) Agnes wondered how John could eat, but it's not clear [what [~~Agnes wondered how John could eat~~]]
 (104) Then LF lowering creates a copy of what that will be interpreted as the needed variable.

- (105) As Chung et al. (2006) note, lowering ought to be completely symmetric with raising, so locality constraints ought to obtain.
- (106) Since the movement operation is covert (unlike in standard Sluicing) PF deletion will have no saving effect.

V. Some remaining questions

P-stranding

- (107) As noted earlier, P-stranding violations evidently cannot be repaired by ellipsis. This is mysterious, in fact paradoxical, if the P-stranding constraint is an 'island constraint'.
- (108) Speculation: Suppose that the P-stranding constraint is derivational: the A-over-A.
- (109) Chomsky (1973) proposed this in anticipation of Postal's argument against successive cyclic wh-movement (Postal (1972)).
- (110) a. To whom do you think (that) John talked
 b. Who do you think (that) John talked to
 c. *Who do you think to (that) John talked
- (111) To allow (110)a and (110)b, Chomsky proposes that the wh-feature on *who(m)* can 'percolate' to the PP *to whom*.
- (112) (110)c is still not possible, since the initial move of the PP means the feature has percolated, so the second step is impossible, by the A-over-A condition.
- (113) Suppose then that the difference (or one of the differences) between languages that do and don't allow P-stranding in initial position is whether the wh-feature **can** or **must** percolate from DP to immediately dominating PP.
- (114) In the latter type of language, even the first P-stranding step would violate the A-over-A. And if we continue to take that as a constraint on the operation of the transformation, P simply couldn't be stranded, so repair would never be a possibility.

Unexpected island symmetry

- (115) Following Uriagereka (1999) and Fox and Pesetsky (2003), I have claimed that islands represent PF effects. But to the extent that the LF locality effects presented by Huang (1982), Lasnik and Saito (1984), and Chung et al. (2006) involve exactly the same islands, it is totally unclear why that should be so.

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