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

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I. Background

A. Classic island constraints of Ross (1967)

Complex NP Constraint   (modified version of a constraint attributed to Ed Klima)
(1)   No element contained in a sentence dominated by a noun phrase with a lexical head noun may
         be moved out of that noun phrase by a transformation.
(2)a   *The man who I read a statement which was about is sick.
   b   The man who I read a statement about is sick.

Coordinate Structure Constraint
(3)   ln a coordinate structure, no conjunct may be moved, nor may any element contained in a
         conjunct be moved out of that conjunct.
(4)a   *What sofa will he put the chair between some table and?
   b   *Whose tax did the nurse polish her trombone and the plumber compute?

Left Branch Condition
(5)   No NP which is the leftmost constituent of a larger NP can be reordered out of this NP by a
         transformational rule.
(6)a   The boy whose guardian's employer we elected president ratted on us.
    b *The boy whose guardian's we elected employer president ratted on us.
    c *The boy whose we elected guardian's employer president ratted on us.

Sentential Subject Constraint
(7)   No element dominated by an S may be moved out of that S if that node S is dominated by an
         NP which itself is immediately dominated by S.
<This assumes that subjects are always NPs, so that sentential subjects are dominated by NP.>
(8)a   The teacher who the reporters expected that the principal would fire is a crusty old fizzlebotch.
    b *The teacher who that the principal would fire was expected by the reporters is a crusty old
         fizzlebotch.
    c   The teacher who it was expected by the reporters that the principal would fire is a crusty old
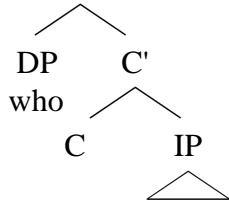   fizzlebotch.

B. The Sluicing Construction (Ross (1969))

(9)   Mary will see someone, but I don't know who
Three kinds of approaches to such constructions:

(10)   .....DP   **WYSIWYG**
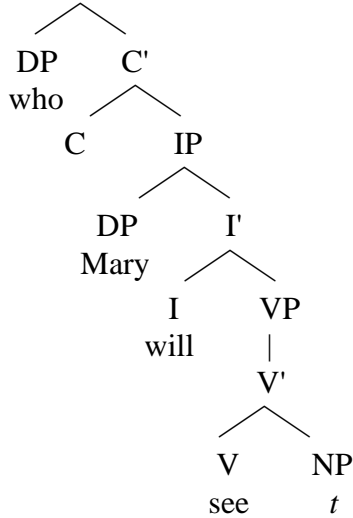   who

OR

(11) **LF copying** approach: Elided and corresponding non-elided sentences are identical only at LF.

(11)   ....CP   Overt syntax

     DP   C'
     who
         C   IP

(12)   ....CP   LF

     DP   C'
     who
         C   IP

           DP   I'
           Mary

              I   VP
            will |
                   V'
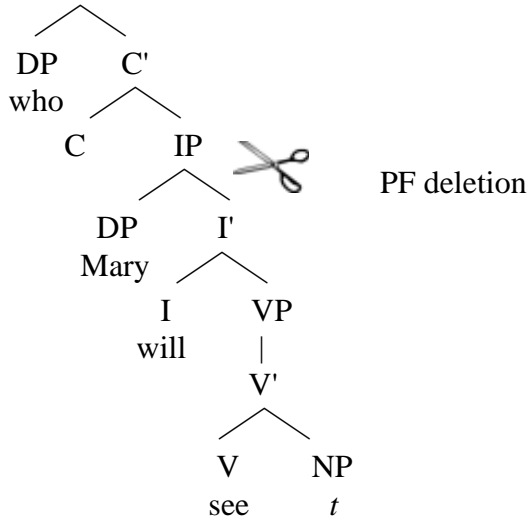
                V   NP
               see   *t*

OR

(10) **PF deletion** approach (essentially what Ross argued for): Elided and corresponding non-elided sentences are identical except at the level of PF.

(13)   ....CP   Overt syntax and LF

     DP   C'
     who
         C   IP   PF deletion

           DP   I'
           Mary

              I   VP
            will |
                   V'

                V   NP
               see   *t*

(14)   Classic argument, due to Ross (1969), for internal structure in an ellipsis site (Sluicing in this case):

(15)   We were supposed to do some problems for tomorrow, but which problems isn't (*aren't) clear

Compare

(16)   We were supposed to do some problems for tomorrow, but which problems we were supposed to do isn't (*aren't) clear

(17)   Even when the Sluicing fragment is plural, agreement is invariably singular, indicating that the fragment is not just a DP, but an entire CP.

(18)   A major argument for the movement and deletion approach is alluded to by Ross, and explored in great detail by Merchant (2001) - Case matching.

(19)   In overtly Case inflected languages (such as German), the Case of the survivor is just what the Case of the fronted WH expression would have been in the non-elliptical form.

(20)   Er will   jemandem   schmeicheln, aber sie wissen nicht,
       he wants someone.DAT flatter   but they know not
       *wer /   *wen /   wem
        who.NOM   who.ACC who.DAT
       'He wants to flatter someone, but they don't know who'

(21)   Er will   jemanden   loben, aber sie wissen nicht,
       he wants someone.ACC praise but they know   not
       *wer /   wen /   *wem
        who.NOM   who.ACC   who.DAT
       'He wants to praise someone, but they don't know who'

Compare

(22)   Er will jemandem   schmeicheln, aber sie wissen nicht,
       he wants someone.DAT   flatter   but they know   not
       *wer /   *wen /   wem   er schmeicheln will
        who.NOM   who.ACC   who.DAT he flatter   wants
        'He wants to flatter someone, but they don't know who he wants to flatter'

(23)   Er will   jemanden   loben, aber sie wissen nicht,
       he wants someone.ACC praise but they know   not
       *wer /   wen /   *wem   er loben will
        who.NOM   who.ACC   who.DAT he praise wants
       'He wants to praise someone, but they don't know who he wants to praise'

(24)   As discussed by Ross and by Merchant, under a movement and deletion analysis, Case can be assigned in the usual way, prior to movement of the wh-phrase. Then the Case will naturally be maintained after movement, and subsequent deletion of the IP.

(25)   Under the alternative approaches, It is not clear how Case matching can be captured.

(26)   A second major argument:. Sluicing and preposition stranding (Ross (1969), as developed by Merchant (1999), Merchant (2001))

(27)   Some languages (mostly West Germanic ones) allow WH-movement of the object of a preposition 'stranding' the preposition.

(28)   Who has Peter talked with *t*

(29)   Vem har Peter talat med *t*   **Swedish**

(30)   Hvem har Peter snakket med *t*   **Danish**

(31)   Other languages (the large majority) do not allow preposition stranding. (* indicates unacceptability.)

(32)   *Pjon   milise   me   **Greek**
       who   she.spoke   with

(33)   *Kim   je   govorila   Ana   sa   **Serbo-Croatian**
       who   Aux   spoken   Ana   with

(34)   Sluicing mirrors these properties, arguing, as hinted by Ross and extensively discussed by Merchant, for an analysis involving internal structure in general and movement followed by deletion in particular.

(35)   Peter was talking with someone, but I don't know who

(36)   Peter har talat   med   någon;   jag vet inte (med) vem   **Swedish**
       Peter has talked with someone   I   know not (with) who

(37)   Peter har snakket med en eller anden, men jeg ved   **Danish**
       Peter has talked   with one or another but   I   know
       ikke (med)   hvem
       not (with) whom

(38)   I Anna milise   me   kapjon, alla dhe ksero *(me) pjon   **Greek**
       the Anna spoke with someone but   not I.know with who

(39)   Ana je   govorila sa   nekim,   ali ne   znam *(sa) kim   **S-C**
       Ana Aux spoken   with someone but not I.know with who

(40)   As reported by Merchant, other languages that behave like English are Frisian, Swedish, Norwegian, Danish, and Icelandic.

(41)   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.

II. Persistence of (some) syntactic constraints under ellipsis

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

(43)   As we just saw, the effects of the parametric **P-stranding** constraint persist under Sluicing.

(44)   Another movement constraint that seems to be maintained under Sluicing is **Superiority** (though there are possibly interfering factors - see Grebenyova (2006) for discussion).

(45)   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).

(46)   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'

cf.

(47)   a.   I don't know who is buying what.
       b. * I don't know what who is buying

(48)   The multiple fronting Superiority effect is preserved under Sluicing:

(49)   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'

(50)   Merchant gives similar examples from Bulgarian, another multiple wh-fronting language.

(51)   a. Koj kogo e   vidjal
           who whom AUX seen
           'Who saw whom?'
       b. *Kogo koj e vidjal
(52)   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

(53)   This is all exactly as one would expect under a single cycle model of grammar (the Multiple Spell-Out of Uriagereka (1999) for example).

(54)   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.

(55)   Merchant presents data indicating that (some) **island violations** also persist under ellipsis, VP ellipsis this time:

(56) *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)

(57) Again, this seems to be just what is expected in a single cycle model.

III. Repair of syntactic constraints

Islands

(58) Ross (1969) already noted a phenomenon that becomes problematic for a single cycle model - island violation repair under sluicing:

(59) I believe that he bit someone, but they don't know who (I believe that he bit)
(60) 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
(61) 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
(62) 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
(63) 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

(64) Based on this phenomenon, Ross explicitly argued against strictly monotonic cyclic derivation:
(65) 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]
(66) "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

(67) 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.
(68) a. John will come if Bill comes
      b. John will come if Bill does
(69) Wasow's point was that on the embedded cycle, Affix Hopping would apply. When VP deletion later operates, no stranded affix remains, so <u>do</u> would not be inserted.

(70) The phenomenon of 'repair by deletion' raises a host of similar problems.

(71) As mentioned above, Ross had already argued that we need a strongly non-Markovian model to capture the facts of island amelioration.

(72)   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.

(73)   If a later operation (Sluicing in the example Chomsky discussed) deletes a category containing the *-marked item, the derivation is salvaged.

(74)   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).

(75)   Wasow's problem evidently arises again under this account. Deletion seems to be too late to rescue the violations.

(76)   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!

(77)   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.

(78)   The ultimate interpretation it receives can be as silence.

(79)   For Wasow's problem, one compatible approach would be that suggested in Lasnik (1981) and Lasnik (1995b).

(80)   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.

IV. Some modern approaches to island constraints and repair by deletion:

(81)   **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).

(82)   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 (81)a.

(83)   This deduces many islands (basically all non-complements).

(84)   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).

(85)   But it won't fail if the problematic material is rendered invisible to phonetics. Thus, repair of (at least these) islands by deletion.

(86)   **Fox and Pesetsky (2003)** propose that at each spell-out domain, linear ordering statements are added to an ever growing Ordering Table.

(87)   When movement does not proceed from each successive phase edge, contradictory ordering statements ultimately appear in the Table.

(88)   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.

(89)   So what of the failure of VP deletion to repair island violations, as in (56)?

(90)   Lasnik (2001b) points out that the generalization is actually stranger even than that, at least at first blush.

(91)   Parallel 'failure of repair' obtains even when there was no violation in the first place.

(92)   Extraction out of an embedded clause is typically fine and Sluicing is just as good, but VPE is bad:

(93)   They said they heard about a Balkan language, but I don't know which Balkan language they said they heard about

(94)   They said they heard about a Balkan language, but I don't know which Balkan language

(95)   *They said they heard about a Balkan language, but I don't know which Balkan language they did

(96)   Similarly for extraction out of an object NP:

(97)   They heard a lecture about a Balkan language, but I don't know which Balkan language they heard a lecture about

(98)   They heard a lecture about a Balkan language, but I don't know which Balkan language

(99)   *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)

(100) Fred said that Mary talked to a certain girl, but I don't know which girl ~~Fred said that Mary talked to t~~

(101) 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

(102) 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.

(103) 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.

(104) 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.

(105) 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).

(106) But why is there no 'repair' with VPE?

(107) VPE involves deletion of a smaller constituent than the clause that is elided in sluicing (VP vs. TP):

(108)   which girl [$_{TP}$ he T [$_{AspP}$ did <$_{VP}$ ~~say that I talked to g(girl)~~>]]

(109) *Fred said that Mary talked to a certain girl, but I don't know which girl he did

(110) 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.

(111) Under the Fox and Pesetsky proposal, at least some contradictory ordering statements will appear in the Table even after VP ellipsis.

(112) 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.

(113) 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:
(114) 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.

V. Non-PF constraints

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

Superiority

(116) 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

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

Long adjunct movement

(118) As pointed out by Huang (1982) and later discussed by Lasnik and Saito (1984), adjunct movement displays very strong island effects:
(119) *How did [Mary meet [a student [who solved the problem t]]]
(120) These violations seem to persist under deletion:
(121) *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
(122) *Which problem did Mary meet a student who solved
(123) Mary met a student who solved a problem, but I'm not sure exactly which problem

(124) If we follow Huang and L&S in treating this locality of adjunct movement as an LF effect, failure of repair follows.

Sprouting

(125)   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: "John ate but I don't know what").

(126)   *Sandy was trying to work out which students would speak but she refused to say who to/to who(m)

(127)   *Agnes wondered how John could eat, but it's not clear what

(128)   *That Tom will win is likely, but it's not clear which race

(129)   Agnes wondered how John could eat, but it's not clear [what ~~[Agnes wondered how John could eat]]~~

(130)   Then LF lowering creates a copy of <u>what</u> that will be interpreted as the needed variable.

(131)   As Chung et al. (2006) note, lowering ought to be completely symmetric with raising, so locality constraints ought to obtain.

(132)   Since the movement operation is covert (unlike in standard Sluicing) PF deletion will have no saving effect. [But see below for a problem.]

VI. Some remaining questions

P-stranding

(133)   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'.

(134)   Speculation: Suppose that the P-stranding constraint is derivational: the A-over-A.

(135)   Chomsky (1973) proposed this in anticipation of Postal's argument against successive cyclic wh-movement (Postal (1972)).

(136)   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

(137)   To allow (136)a and (136)b, Chomsky proposes that the wh-feature on *who*(*m*) can 'percolate' to the PP *to whom*.

(138)   (136)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.

(139)   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.

(140)   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

(141)   Following Uriagereka (1999), Fox and Lasnik (2001), and Fox and Pesetsky (2003), I have claimed that standard 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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