**Feature Strength**:
Three Minimalist Approaches to Overt Movement
Howard Lasnik

(1)   Given an economy condition like Procrastinate, we would expect all movement to be covert. When movement is overt, it must have been forced to operate 'early' by some special requirement. Chomsky (1993;1994;1995) codes this requirement into 'strong features'.

(2)A   A strong feature that is not checked in overt syntax causes a derivation to crash at PF. Chomsky (1993)

   B   A strong feature that is not checked (and eliminated) in overt syntax causes a derivation to crash at LF. Chomsky (1994)

   C   A strong feature must be eliminated (almost) immediately upon its introduction into the phrase marker. Chomsky (1995, ch.4)

(3)   Justification for (**A**): "...the position of Spell-Out in the derivation is determined by either PF or LF properties, these being the only levels, on minimalist assumptions. Furthermore, parametric differences must be reduced to morphological properties if the Minimalist Program is framed in the terms so far assumed. ... we expect that at the LF level there will be no relevant difference between languages with phrases overtly raised or in situ (e.g., wh-phrases or verbs). Hence, we are led to seek morphological properties that are reflected at PF."

(4)   Technological details: "...'strong' features are visible at PF and 'weak' features invisible at PF. These features are not legitimate objects at PF; they are not proper components of phonetic matrices. Therefore, if a strong feature remains after Spell-Out, the derivation crashes...Alternatively, weak features are deleted in the PF component so that PF rules can apply to the phonological matrix that remains; strong features are not deleted so that PF rules do not apply, causing the derivation to crash at PF."

(5)   Justification for (**B**) (apparently empirical rather than conceptual):
(6)   *John read what?
(7)a   "...Spell-Out can apply anywhere, the derivation crashing if a 'wrong choice' is made...If the phonological component adds a lexical item at the root, it will introduce semantic features, and the derivation will crash at PF. If the covert component does the same, it will introduce phonological features, and the derivation will therefore crash at LF...

   b   Suppose that root C (complementizer) has a strong feature that requires overt wh-movement. We now want to say that unless this feature is checked before Spell-Out it will cause the derivation to crash at LF to avoid the possibility of accessing C after Spell-Out in the covert component."

(8)   Technology: "Slightly adjusting the account in Chomsky (1993), we now say that a checked strong feature will be stripped away by Spell-Out, but is otherwise ineliminable."

(9)   Spell-Out: C [strong Q] John read what   *LF

(10)   Spell-Out: John read what
         LF: C [strong Q] John read what   *LF

(11)   Justification for (**C**) (contra (A)): "...formulation of strength in terms of PF convergence is a restatement of the basic property, not a true explanation. In fact, there seems to be no way to improve upon the bare statement of the properties of strength. Suppose, then, that we put an end to evasion and simply define a strong feature as one that a derivation 'cannot tolerate': a derivation D→Σ is canceled if Σ contains a strong feature..."

(12)   Technology: "A strong feature...triggers a rule that eliminates it: [strength] is associated with a pair of operations, one that introduces it into the derivation...a second that
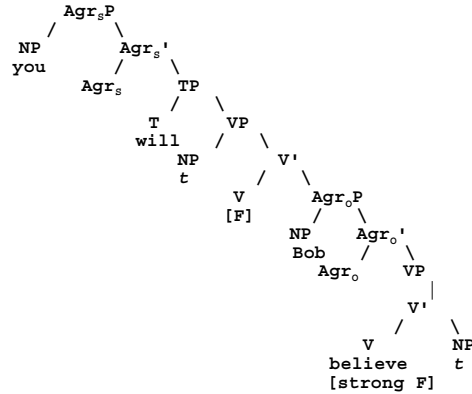
(quickly) eliminates it."

(13)   Ellipsis provides potential evidence for (A), if it is, as suggested by Chomsky and Lasnik (1993), a PF deletion process.

(14)   Two instances: first Pseudogapping then Sluicing.

(15)a   If you don't believe me, you will ∅ the weatherman
    b   I rolled up a newspaper, and Lynn did ∅ a magazine
    c   Kathy likes astronomy, but she doesn't ∅ meteorology   Levin (1978)

(16)a   The DA proved Jones guilty and the Assistant DA will ~~prove~~ Smith ~~guilty~~
    b   ?John gave Bill a lot of money, and Mary will ~~give~~ Susan ~~a lot of money~~

(17)   You might not believe me but you will Bob

(18)   NP-raising to Spec of Agr_O ('Object Shift') is overt in English. [Koizumi (1993;1995), developing ideas of Johnson (1991)]

(19)   Pseudogapping as overt raising to Spec of Agr_O followed by deletion of VP. [Lasnik (1995)]

(20)

(21)
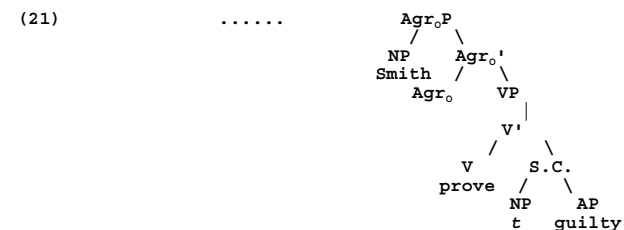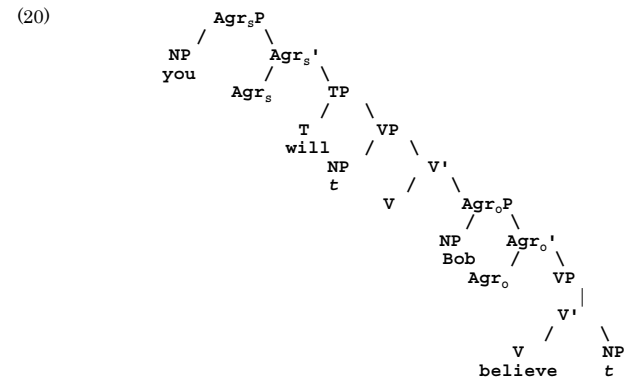
(22)   *You will Bob believe
(23)   *The Assistant DA will Smith prove guilty

(24)
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                  Agr_sP
                 /     \
              NP        Agr_s'
              you      /     \
                    Agr_s     TP
                            /    \
                          T        VP
                        will     /    \
                               NP       V'
                               t      /   \
                                    V       Agr_oP
                                   [F]     /     \
                                        NP        Agr_o'
                                        Bob      /     \
                                             Agr_o       VP
                                                          |
                                                          V'
                                                        /    \
                                                      V        NP
                                                  believe       t
                                                 [strong F]
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(25)   Suppose the strong feature driving V-raising resides in the lexical V rather than in the higher 'shell' V. The strong feature of the verb must **either** be checked by overt raising to the shell V **or** be contained in an ellipsis site. PF deletion could eliminate the unchecked strong feature.
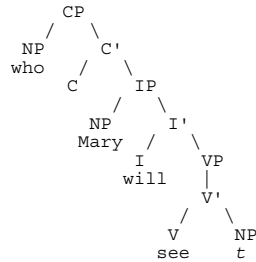
(26)   Sluicing - WH-Movement followed by deletion of IP (abstracting away from 'split Infl' details). [Saito and Murasugi (1990), Lobeck (1990)]

(27)

(28)   Speaker A: Mary will see someone.
         Speaker B: I wonder who ~~Mary will see~~.

(29)   Speaker A: Mary will see someone.
         Speaker B: Who ~~Mary will see~~?

(30)
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                 CP
               /    \
             NP       C'
             who     /   \
                   C       IP
                         /    \
                       NP       I'
                      Mary     /  \
                             I      VP
                           will      |
                                     V'
                                   /    \
                                 V        NP
                               see         t
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(31)   *Who Mary will see?
(32)   Who will Mary see?

(33)   Suppose that in a matrix interrogative, it is Infl that has a strong feature, rather than C. The strong feature of Infl must **either** be checked by overt raising to the interrogative C **or** be contained in an ellipsis site. PF deletion could eliminate the unchecked strong feature.

(34)   Infl-raising to C is uncontroversially overt in normal matrix interrogatives. NP-raising to Spec of Agr_O, on the other hand, is standardly assumed to be covert in English. Lasnik (1995), based on Lasnik and Saito (1991) [see also Postal (1974) and Wyngaerd (1989)] and den Dikken (1995), argues that such movement is, indeed, overt.

(35)a   There is a man here
    b   There are men here

(36)a   Many linguistics students aren't here
    b   There aren't many linguistics students here

(37)a   Some linguists seem to each other [t to have been given good job offers]
    b   *There seem to each other [t to have been some linguists given good job offers]

(38)a   No good linguistic theories seem to any philosophers [t to have been formulated]
    b   *There seem to any philosophers [t to have been no good linguistic theories formulated]

(39)a   Some defendant_i seems to his_i lawyer [t to have been at the scene]
    b   *There seems to his_i lawyer [t to have been some defendant_i at the scene]

(40)   "The operation Move...seeks to raise just F." Chomsky (1995)
(41)   When movement is covert, hence only of formal features, the referential and quantificational properties needed to create new binding and scope configurations are left behind, so no such new configurations are created. Lasnik (1995) (contra Chomsky (1995), at least in part)

(42)   The DA questioned two men during each other's trials
(43)a   The DA proved [two men to have been at the scene] during each other's trials
    b   *The DA proved [there to have been two men at the scene] during each other's trials

(44)   The DA questioned noone during any of the trials
(45)a   The DA proved [noone to be at the scene] during any of the trials
    b   *The DA proved [there to be noone at the scene] during any of the trials

(46)   The DA questioned no suspect_i during his_i trial
(47)a   The DA proved [no suspect_i to be at the scene of the crime] during his_i trial
    b   *The DA proved [there to be no suspect_i at the scene of the crime] during his_i trial

(48)   One further argument: Given the feature movement theory of covert movement, if an instance of movement creates a new ellipsis configuration, that movement must be overt. (This is true whether ellipsis is PF deletion or LF copying.)

(49)   Possible arguments against the PF approach to strong features (**2A**):
(50)a   'Look-ahead' is needed. At a given point in the overt portion of a derivation, it is necessary to inspect the PF representation to see whether Procrastinate can be evaded. [The LF approach (**2B**) shares this problem.]
    b   The derivation of *John read what* in (9-10) above, with covert insertion of C with a strong feature, won't be blocked.

(51)   (**2C**) above, repeated here, is designed to eliminate the Look-ahead problem.
(52)   A strong feature must be eliminated (almost) immediately upon its introduction into the phrase marker. Chomsky (1995, ch.4)
(53)   "We...virtually derive the conclusion that a strong feature triggers an *overt* operation to eliminate it by checking. This conclusion follows with a single exception: covert merger (at the root) of a lexical item that has a strong feature but no phonological features..." Chomsky (1995)

(54)   (55) is thus still problematic.
(55)   *John read what

(56)   To prevent this, covert insertion of strong features must be barred. Chomsky proposes to do this with the economy principle (57):
(57)   α enters the numeration only if it has an effect on output.

(58)   "Under [57], the reference set [for economy comparisons] is still determined by the numeration, but output conditions enter into determination of the numeration itself..."
(59)   Look-ahead?

(60)   "With regard to the PF level, *effect* can be defined in terms of literal identity...α is

(61)   selected only if it changes the phonetic form.
At the LF level the condition is perhaps slightly weaker, allowing a narrow and readily computable form of logical equivalence to be interpreted as identity."

(62)   Clearly, covert insertion of a C will have no phonetic effect. Will it have an effect at the LF output?

(63)   If it will, then covert insertion is allowed, and we generate (55) with structure (64):

(64)   C [$_{IP}$ John read what]

(65)   If it will not, then we generate (55) with structure (66):

(66)   [$_{IP}$ John read what]

(67)   (67) violates no morphological requirements, and, if C has no effect on output, then it should mean exactly *What did John read?*

(68)   "...the interface representations (π,λ) are virtually identical whether the operation [covert insertion of strong features] takes place or not. The PF representations are in fact identical, and the LF ones differ only trivially in form, and not at all in interpretation."

(69)   Chomsky (1995) proposes that strength is always a property of an 'attracting' head, never a property of the item that moves. The above analyses of Pseudogapping and Sluicing are incompatible with that proposal.

(70)   There is a possible alternative analysis, based on the Chomsky (1995) theory of pied-piping, particularly as explicated by Ochi (1997).

(71)   "For the most part - perhaps completely - it is properties of the phonological component that require pied-piping. Isolated features and other scattered parts of words may not be subject to its rules, in which case the derivation is canceled; or the derivation might proceed to PF with elements that are 'unpronounceable,' violating FI." Chomsky (1995)

(72)   " Just how broadly considerations of PF convergence might extend is unclear, pending better understanding of morphology and the internal structure of phrases. Note that such considerations could permit raising without pied-piping even overtly, depending on morphological structure..."

(73)   Matrix interrogative C might then contain the strong feature, with the matching feature of Infl raising overtly to check it. 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.

(74)   Similarly for the feature driving overt V-raising: it could be a strong feature of the **higher** V. Once the matching feature of the lower lexical V is 'attracted', the lower V becomes defective. A PF crash will be avoided if either pied-piping or deletion of a category containing the lower V (VP Deletion = Pseudogapping in the relevant instances) takes place.

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