A Distinctness Condition on Linearization[*]

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A variety of syntactic phenomena seem to involve a ban on multiple adjacent identical objects. I develop a theory of phenomena of this type, positing a constraint on linearization at the syntax-phonology interface which prevents linearization of structurally adjacent syntactic objects with the same label. The claim is that linearization statements make reference only to node labels, not to particular nodes of the tree, and thus cannot impose an ordering on two nodes with the same label.

Keywords: LCA, phase, Stylistic Inversion, quotative inversion, construct state, Case
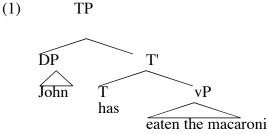
In this paper I will propose a new well-formedness condition on the linearization statements used by Kayne's (1994) LCA. The new restriction on ordering statements will have the effect of making multiple syntactic nodes with the same label impossible to linearize if they are close together in the structure, in a sense to be made precise. Such unlinearizable structures are therefore banned, and are avoided in a number of ways, as we will see. The goal will be to capture a number of recalcitrant syntactic phenomena

that seem to conform to a general pattern of avoidance of adjacent identical objects (similar to the effects of the OCP in phonology)[1].

I will assume, with Chomsky (1995, 2000, 2001) that the trees generated by the syntax do not contain information about linear order, and that linearizing the nodes of the tree is one of the tasks performed by the operation of Spell-Out. I will assume that linearization is accomplished via Kayne's (1994) LCA. Spell-Out considers the set **A** of pairs of asymmetrically c-commanding XPs and X^os in the tree which the syntax gives it, and generates from this a set of instructions for linearization; if $<\alpha, \beta>$ is in A, then the *image* of α (that is, the terminals dominated by α) precedes the image of β.

I will also assume, again following Chomsky (2000, 2001), that Spell-Out can occur several times in the course of a syntactic derivation; in particular, that it occurs as soon as a <u>strong phase</u> has been constructed. Strong phases will be CP and transitive vP (and possibly DP, though this will not be particularly important). Spell-Out sends the material in a strong phase to PF, making all of it inaccessible to further syntactic operations, apart from its edge; following Chomsky (2000, 2001), the edge will be the material in the highest specifier and head positions of the phase. I will crucially assume, following Nissenbaum (2000), that the edge is linearized with the material in the higher phase.
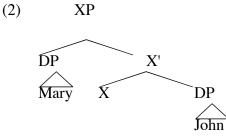
I will assume, adapting an assumption of Chomsky (1995), that traces of movement do not need to be linearized[2] (see also Nunes (1995)). In fact, I will assume something slightly stronger: that nodes that dominate traces (and their maximal projections, when the traces are traces of head-movement) cannot be in the set **A** of asymmetric c-command pairs which is used for linearization; such nodes are obligatorily ignored. Let us also

assume, not unreasonably, that Spell-Out strips away phonologically null material; this

will allow a phrase which has previously undergone Spell-Out to be linearized even if it

has a trace in it, which will frequently be the case.

Finally, I would like to propose a new condition on linearization. Suppose we

consider how a tree like the one in (1) is typically linearized:

(1)   TP

```
            TP
          /    \
        DP       T'
        /\      /  \
     John      T     vP
             has    /  \
                eaten the macaroni
```
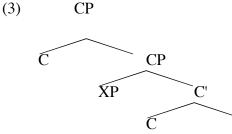
We standardly think of ordering statements as making reference to particular nodes of the

tree, often identified by the terminals they dominate; for instance, we might describe **A**

for the tree in (1) as containing the pair <DP (*John*), T (*has*)>. What I would like to

suggest is that such explicit reference to particular nodes of the tree is impossible,

perhaps because lexical insertion takes place after linearization. Instead of the pair <DP

(*John*), T (*has*)>, then, **A** should contain the pair <DP, T>, which will be interpreted as

meaning "the image of DP precedes the image of T".

In this particular instance, of course, this distinction is not an important one. But

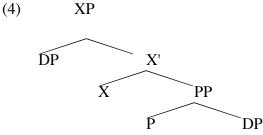suppose we consider a tree containing two DPs:

(2)   XP
```
        XP
       /  \
      DP    X'
     /\    /  \
   Mary  X     DP
               /\
             John
```

Again, standard assumptions about linearization might allow **A** to contain pairs like <DP

(*Mary*), DP (*John*)>. Equivalently, we might assign the two DPs indices, or allow the

pairs in **A** to contain structural information that uniquely identified each DP (yielding

pairs like <DP-in-Spec-XP, DP-complement-of-X>). But if we assume that none of these

mechanisms are available, then we are left with the ordering statement <DP, DP>. Such

a statement might be taken to be self-contradictory, requiring DP to precede itself.

Similarly, consider a tree with two CP projections:

(3)   CP
```
        CP
       /  \
      C    CP
          /  \
        XP    C'
        |    / \
        C   
```

A for a tree like (3) might contain, on the theory under development here, <C, XP>, <XP,

C>. These ordering statements, as they stand, seem to be mutually contradictory, and

hence unhelpful for ordering.

By way of contrast, let us consider a tree in which two nodes with the same label

can in fact be ordered:

(4)   XP

```
        XP
       /  \
     DP    X'
          /  \
         X    PP
             /  \
            P    DP
```

In the tree in (4) there are two DPs, as before. **A** for (4) will include the statement <DP, PP>, which will allow for a way of establishing the ordering of the two DPs; because DP precedes everything in the image of PP, it precedes the second DP, which that PP dominates. Although these DP nodes could not be ordered directly, then, in this tree they can in fact be ordered, because one asymmetrically c-commands a node (namely PP) which dominates the other.

This approach to the LCA requires that ordering statements make reference to node types rather than to particular tokens of syntactic objects, thereby limiting the class of ordering statements which can actually be used to impose an ordering on terminals. As a result, syntactic objects of the same type are prevented from being too close to each other structurally, and we will see that this seems to be desirable.

We will also see that it will be useful to assume that the conditions on ordering statements described above are only relevant for the ordering of functional heads; lexical heads and their projections can be distinguished by the LCA even if they have the same label. This distinction will be discussed further in section 5 below, where I will suggest that it be related to recent work in Distributed Morphology arguing that lexical heads are inserted earlier than functional heads.

The theory being developed here is one in which syntax does not have reference to the full array of properties of certain syntactic objects when it performs linearization operations. I have been describing this limitation on linearization statements in terms of node labels. It is perhaps worth pointing out that this is not obviously crucial; all that is necessary is that the syntax be unable to distinguish between, for instance, DPs which dominate distinct lexical items. Purely for the sake of convenience, I will continue to make use of node labels in what follows.

In the next section I will discuss a number of phenomena which arguably involve bans on multiple adjacent objects with the same label, and will show how the facts follow from the considerations outlined above.

1. Distinctness violations

In this section we will consider a number of instances in which linearization fails because the objects to be linearized in a single strong phase are insufficiently distinct.

1.1 French stylistic inversion, English quotative inversion

French has a phenomenon known as Stylistic Inversion (see Kayne 1972, Kayne and Pollock 1978, Deprez 1988, Valois and Dupuis 1992, and references cited there for discussion). French subjects may be postposed in wh-extraction contexts:

French (Kayne and Pollock 1978, 595)

(5) a. Quand   partira   ton ami?

      when   will-leave your friend

   'When will your friend leave?'

   b. Je me demande quand   partira   ton   ami

      I me   ask   when will-leave your friend

   'I wonder when your friend will leave'

However, Stylistic Inversion is impossible when the verb is transitive and both arguments remain to the right of the verb:

   French (Valois and Dupuis 1992, 327)

(6) a. *Je me demande quand mangera sa pomme Marie

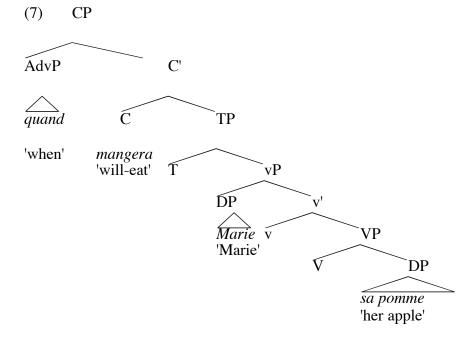   I me   ask   when will-eat her apple   Marie

   'I wonder when Marie will eat her apple'

   b. *Je me demande quand mangera Marie sa pomme

      I me   ask   when will-eat Marie her apple

   'I wonder when Marie will eat her apple'

An example like (6b) might be given the partial tree in (7):

(7)   CP

```
        CP
       /  \
    AdvP    C'
     /\
   quand   C      TP
  'when'  /      / \
      mangera   T    vP
      'will-eat'    /  \
                  DP    v'
                  /\   / \
               Marie v   VP
               'Marie'   / \
                        V   DP
                            /\
                        sa pomme
                        'her apple'
```

In (7), vP is a strong phase, containing two DPs. Consider how vP would be linearized. If we only consider c-command relations, A might be the set in (8)[3]:

(8)   {<DP(*Marie*), v>, <DP (*Marie*), V>, <DP (*Marie*), V>,

      <DP (*Marie*), DP (*sa pomme*)>, <DP (*Marie*), VP>, <v, V>, <v, DP (*sa pomme*) >}

However, we are assuming that because traces need not be linearized, any node dominating a trace is not considered for purposes of computing A. This eliminates most of the pairs in (8), leaving us with (9):

(9)   {~~<DP(*Marie*), v>, <DP (*Marie*), V>, <DP (*Marie*), V>,~~

      <DP (*Marie*), DP (*sa pomme*)>, ~~<DP (*Marie*), VP>, <v, V>, <v, DP (*sa pomme*) >~~}

In fact, the one pair left in (9) cannot be used for linearization either. For purposes of clarity, I have identified the two DP nodes in this pair by the lexical items they dominate, but the claim I am defending here is that this information is in fact unavailable to the

grammar; this pair should actually be represented as <DP, DP>, and is therefore useless for linearization.

English quotative inversion exhibits a similar constraint, which could be accounted for in a similar way. Quotative inversion is possible just when it leaves only a single DP argument to the right of the verb:

(10) a. "It's raining," said the weatherman

    b. "It's raining," said the weatherman to the anchorwoman

    c. *"It's raining," told the weatherman the anchorwoman

In (10c), linearization fails; as in the French stylistic inversion case, **A** for vP consists only of the pair <DP, DP>, which is unhelpful. See Anagnostopoulou and Alexiadou (2001) for insightful discussion of a number of phenomena of this type.

1.2 Multiple sluicing, multiple exceptives, *even*

As pointed out by Sauerland (1995) and Moltmann (1995), English exhibits an odd constraint on several types of construction involving multiple ellipsis remnants. Multiple remnants with exceptives, ellipsis with *even*, and sluicing are all in principle possible in English:

(11) a. Every man danced with every woman, except [John] [with Mary]

    b. Every man danced with every woman, even [John] [with Mary]

    c. I know somebody was dancing with somebody,

        but I don't know [who] [with whom]

In English, such constructions are impossible if the remnants are both DPs:

(12) a. *Every man admired every woman, except [John] [Mary]

b. *Every man admired every woman, even [John] [Mary]

c. *I know somebody insulted somebody, but I don't know [who] [whom]

If we assume that the ellipsis remnants are both in the same phase (perhaps because a movement operation has moved them both out of the domain of ellipsis), then these facts follow from Distinctness; in (12), the two DPs cannot be linearized.

Interestingly, the condition English imposes on this construction is not universal. German (Moltmann 1995, Sauerland 1995) and Japanese (Takahashi 1994) allow multiple DP remnants:

(13) a. Jede Frau   sah jeden Mann ausser [diese Frau] [diesen Mann]

every woman saw every man   except this woman this   man

b. Ich habe jedem Freund ein Buch gegeben,

I   have every friend a   book given

aber ich weiß nicht mehr wem welches

but   I   know not   more who which

'I gave every friend a book, but I don't remember anymore who which'

(14) Watashi-wa dono otokonoko-ni-mo hoshigatteita subete-no hon-o ageta ga,

I   TOP every boy   DAT   wanted   every   book gave but

dare-ni   nani -o   ka wasureta.

who DAT what ACC Q forgot

'I gave every boy all the books he wanted, but I've forgotten who what'

Japanese and German also differ from English in having comparatively rich case marking on nominals, and we might entertain the possibility that this is a relevant difference; Japanese and German nouns are sufficiently distinct from one another that they can legitimately be brought close together. Some evidence for this account comes from Japanese sluicing. Japanese sluicing with a single remnant can optionally drop case marking, as (15) shows (Shin Ishihara, Ken Hiraiwa, personal communication):

(15) Dareka   -ga   kita   to   kiita kedo, dare (ga)   ka wakaranai

      someone NOM came that heard but   who NOM Q know-NEG

      'I heard that someone came, but I don't know who'

Multiple sluicing, however, requires case marking:

(16) Dareka   -ga   nanika   -o   katta   to   kiita kedo,

      someone NOM something ACC bought that heard but

         dare *(ga)   nani *(o)   ka wakaranai

         who NOM what ACC Q know-NEG

      'I know that somebody bought something, but I don't know who what'

Again, these facts follow straightforwardly, as long as our inventory of syntactic features is sufficiently rich for DPs with different case marking to be given different labels in German and Japanese[4].

1.3 Tagalog predication

In Tagalog we find another instance of an apparent ban on structurally adjacent DPs, which can be attributed to Distinctness. Tagalog is a predicate-initial language,

which in principle allows any kind of phrase to be a predicate. The examples in (17)

show the behavior of VP, AP, PP, and NP predicates, respectively:

(17) a. Umuwi   si Juan

      went-home   Juan

   ‘Juan went home’

  b. Mataas si Juan

      tall   Juan

   ‘Juan is tall’

  c. Tungkol sa balarila   ang   libro

      about   grammar the   book

   ‘The book is about grammar’

  d. Guro si Maria

      teacher Maria

   ‘Maria is a teacher’

Tagalog also allows the subject to be fronted by a variety of means. Such fronting

apparently involves raising of the subject to a higher position, and is subject to the

locality restrictions Tagalog typically imposes on A-bar extractions generally, including

wh-movement; in particular, such fronting is essentially limited to subjects (and certain

kinds of adjuncts). One type of fronting involves a morpheme *ay* after the fronted

subject, which I will not attempt to gloss here:

(18) a. Kumain si Maria ng bangos

      ate   Maria   milkfish

'Maria ate milkfish'

    b. Si Maria ay kumain ng bangos

       Maria   ate   milkfish

    c. *Ng bangos ay kumain si Maria

(18a) and (18b) are both grammatical and completely synonymous; native speakers report no difference in meaning at all, though (18b) is felt to be slightly more formal.

Tagalog also allows DPs to be predicates. However, when a DP is a predicate, fronting of the subject is obligatory:

(19) a. Si Maria ay ang pangulo

       Maria   the   president

'Maria is the president'

    b. *Ang pangulo si Maria

Again, we can make sense of these facts in terms of Distinctness. (19b) involves two DPs, with no material intervening between them, arguably both in the same phase; apparently this situation must be remedied by moving one of the DPs further away, perhaps into a distinct phase.

1.4 DP-internal arguments

Within a gerund, the subject and object of the verb on which the gerund is based may optionally be expressed as PPs headed by *of*:

(20) a. the singing [of the children]

     b. the singing [of songs]

However, only one argument may surface in this way:

(21) *the singing [of the children] [of songs]

The ban on nominalization of verbs with double objects (Kayne 1984, Pesetsky 1995)

might follow in a similar way:

(22) a. the gift [of a book] [to John]

     b. *the gift [of John] [of a book]

For the contrast in (22) to follow from Distinctness, there will have to be some relevant

difference between PPs headed by *of* and those headed by *to* (and, in the particular

implementation of the account being pursued here, this difference will have to be realized

as a difference in the labels). One possibility would be to view *of* in these constructions

as a pronounced K(ase) head, while *to* is actually a P, so that the prepositional phrases in

(22a) are a KP and a PP, respectively.

2.   Phase boundaries

     The account I have sketched of phenomena like those in the previous section is

sensitive to syntactic structure in a way that I have not yet shown to be necessary. At this

stage, we might wonder whether so much syntactic heavy machinery is really called for

to deal with the phenomena under discussion; one might, instead, posit a low-level ban on

"stuttering" which penalized linearly adjacent words of the same kind. We might claim,

in other words, that the phenomena I have just discussed have nothing to do with syntax.

In this section and the following one, I will try to defend my claim that Distinctness effects really do make crucial reference to syntactic structure, and are not about linear adjacency. The syntactic conditions that give rise to Distinctness effects, I will argue, often do result in linear adjacency between the syntactic objects involved, but we will see that adjacency is neither necessary or sufficient for Distinctness effects to arise. In this section, we will show that linear adjacency is insufficient to get Distinctness effects; the next section will be devoted to showing that it is unnecessary.

This section will demonstrate, then, that Distinctness effects may fail to hold even when identical objects are linearly adjacent. The theory developed here, by making use of multiple Spell-out, makes the claim that Distinctness will be sensitive to the distribution of strong phase boundaries; if a strong phase boundary separates two syntactic objects, then they will be spelled out in separate phases, and there will be no need to linearize them with each other.

2.1   Perception/causative verb passives, doubl-ing, Italian double infinitive filter

A number of phenomena involve bans on sequences of adjacent verbs, which can be treated in terms of Distinctness. We will see that these bans are sensitive to phase boundaries.
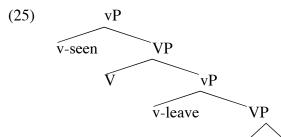
Sentences like those in (23) cannot be passivized:

(23) a. We saw John leave

b. We let John leave

c. We made John leave

(24) a. *John was seen __ leave

    b. *John was let __ leave

    c. *John was made __ leave

We might attribute the ill-formedness of (24) to a Distinctness violation. Assuming that

V always raises at least to v in English, the two v's in the examples in (25) cannot be

linearized:

(25)

```
            vP
          /    \
     v-seen     VP
              /    \
             V      vP
                  /    \
             v-leave    VP
                        /\
                       /__\
```

I have drawn (25) as though the complement of verbs like *see* and *let* were a vP; though

this seems not completely implausible, it is not crucial to the account given here, which

requires only that the complement contain no strong phase boundaries and no other head

positions not occupied by traces. (25) cannot be linearized; there are two heads with v-

features, and no statement in A will linearize them, since Distinctness makes out

statements like <v-seen, v-leave> useless[5]. Crucially, the pair <v, vP> (the pair

consisting of the higher v and the lower vP) will have to be unable to make linearization

possible; I will return to this issue in section 5, where I will suggest that Distinctness may

not make a distinction between minimal and maximal projections.

    Note that the relevant notion clearly is not simply string-adjacency, since wh-

traces, unlike NP-traces, do relevantly intervene between the verbs:

(26)   a. [how many prisoners] did you see __ leave?

b. [how many prisoners] did you let __ leave?

c. [how many prisoners] did you make __ leave?

In terms of the theory developed here, this contrast between wh-traces and NP-traces can be made to follow from the distribution of strong phases. The higher verb in the examples in (26) is associated with the apparatus of case-assignment to the wh-moved NP--that is, the vP of the higher clause is transitive, and hence a strong phase, unlike the vP of the higher clause in (24), which is intransitive. In these examples, the higher of the two instances of v is on the edge of a strong phase, and is therefore linearized with the higher phase (following Nissenbaum 2000); linearization therefore succeeds[6].

English has another phenomenon very reminiscent of the one discussed above, originally discovered by Ross (1972). Ross notes that (27d) is ill-formed, which is surprising in light of the well-formedness of (27a-c):

(27) a. It continued to rain

b. It continued raining

c. It's continuing to rain

d. *It's continuing raining

Ross proposes a "Double -*ing* Filter"; adjacent verbs with the ending -*ing* are banned. The relevant configuration can apparently be broken up by traces of A'-movement, though not by traces of A-movement, just like the cases in the previous two sections (or, to put the facts in terms of the theory under development here, the higher verb can escape Distinctness if there is a strong phase boundary that it can pass through). (27d) above

shows that A-movement traces cannot relevantly intervene, while (28) shows that wh-traces can:

(28) the children [that I was watching __ playing]

One obvious question that arises is what makes verbs with *-ing* sensitive to the constraint. There is one other phenomenon which seems to group verbs with *-ing* together to the exclusion of others, suggesting that they may have a morphological feature which is being subjected to Distinctness in these cases. The phenomenon in question is ellipsis. Warner (1986) notes that under certain circumstances, a verb can elide even when the "model" verb is not morphologically identical (see also Hagstrom 1994, Lasnik 1999 for discussion):

(29) a. John has slept, and now Mary will ~~sleep~~

b. John ate some cheese, and now Mary will ~~eat some cheese~~

In (29), we see that a bare verb can elide using a past participle or a past tense verb as its model. When the model has the *-ing* suffix, however, this kind of ellipsis is impossible:

(30) *John was eating some cheese, and now Mary will ~~eat some cheese~~

Thus, verbs suffixed with *-ing* seem to be different from all other verbs with respect to this phenomenon, as well, which might lend some comfort to a hypothesis that the head *-ing* is syntactically different in some relevant way from other functional heads.

Finally, Longobardi (1980) discusses a phenomenon in Italian which shares many of the properties of the English facts discussed above. Under certain circumstances, he notes, sequences of infinitives are unacceptable in Italian:

(31) *Paolo potrebbe sembrare __ dormire   tranquillamente

        Paolo could   seem-INF   sleep-INF quietly

In (31), the verbs *sembrare* and *dormire* are in the same strong phase. The vP associated

with *sembrare* is not a case-assigning one, and hence does not create a strong phase

boundary. As in the English case discussed above, a trace of A'-movement can block the

relation between the two verbs:

(32) Ecco l'uomo [che puoi   vedere __ portare   ogni giorno dei   fiori   a Mario]

        here's the-man that you-can see-INF   take-INF every day   some flowers to Mario

Again, we can capture this fact in terms of strong phase boundaries. *vedere* 'see-INF' in

(32) is associated with a transitive vP, which checks Case on the relative operator.

Movement of *vedere* out of this strong phase allows the two verbs to be linearized

separately.

        The double-infinitive filter is certainly not universal; it is not found in French or

Spanish, for instance:

(33) a. Paul pourrait sembler   dormir   calmement   [*French*]

            Paul could   seem-INF sleep-INF calmly

      b. Pablo pudo parecer   dormir   tranquilamente [*Spanish*]

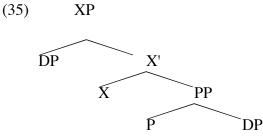   Pablo could seem-INF sleep-INF quietly

In this connection, it may be relevant that Italian infinitives are structurally high (Pollock

(1989), Belletti (1990), Cinque (1999)). Some of the languages which lack a double-

infinitive filter also have comparatively low infinitives (this is true of French, for

example). Distinctness would make this a natural correlation; infinitives which remain

low in the structure do not raise to the edge of the phase defined by the lower clause, and thus need not be linearized in the same phase as the verb of the higher clause. Whether the distinction between high and low infinitives is sufficient to predict whether a language will have a double-infinitive filter or not is unclear, however. Cinque (1999) describes Spanish infinitives as being relevantly like Italian ones in terms of verb height, but Spanish lacks a double-infinitive filter. More work is clearly in order.

These three phenomena--the English ban on passives of verbs taking bare infinitive complements, the English doubl-ing filter, and Italian's double infinitive filter--clearly ought to be accounted for within the same theory. They share a number of intriguing properties, notably sensitivity to phase boundaries (previously described as sensitivity to the presence of case-marked traces). In the account developed here, all of these phenomena are instances of the effects of Distinctness; the functional heads associated with the verbs cannot be linearized if they are both in the same strong phase, since they have the same label.
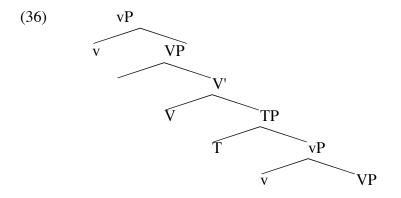
Several of the phenomena above have another intriguing property in common; they can be rescued by the insertion of a preposition. This is true, for instance, of many cases of passives of bare-infinitive-taking verbs in English:

(34) a. John was seen __ [to leave]

   b. *John was let __ [to leave]

   c. John was made __ [to leave]

I do not understand why (34b) is ill-formed, but the well-formedness of (34a) and (34c) is expected. The structure is relevantly like that in (4) above, repeated here as (35):

(35) XP

```
         XP
        /  \
      DP    X'
           /  \
          X    PP
              /  \
             P    DP
```

In the thought-experiment in (4), the offending objects were DPs, but the same reasoning

holds for v heads; here, another functional head (the T head *to*) has a maximal projection

dominating the lower head and c-commanded by the higher:

(36) vP

```
         vP
        /  \
       v    VP
            /  \
                V'
               /  \
              V    TP
                  /  \
                 T    vP
                     /  \
                    v    VP
```

The two v heads in (36) could not be linearized if TP were not present; the higher V is

has moved to the higher v, and hence is not considered for linearization, being a

movement trace. With TP in the tree, however, linearization becomes possible; the

higher instance of v asymmetrically c-commands TP, and TP's image contains the lower

instance of v, allowing a total ordering. We will consider this strategy for linearization

further in section 3 below.

Interestingly, the insertion of this preposition seems to be a last-resort strategy; the

active counterparts of (34a) and (34c) are ill-formed:

(37) a. *We saw John to leave

b. *We made John to leave

Similarly, in Italian, potential violations of the double-infinitive filter can be rescued by separating the two verbs with a preposition:

(38) a. *Claudio potrebbe desiderare finire   il suo lavoro

Claudio could   want-INF finish-INF the his work

b. Claudio potrebbe desiderare **di** finire il suo lavoro

For some verbs, at least, this preposition-insertion has the same last-resort character that it does in English; for some speakers, such prepositions cannot be naturally inserted when no violation of the double-infinitive filter is at stake:

(39) ??Claudio desidera di finire il   suo lavoro

Claudio wants   to finish the his work

2.2 Chaha[7] *yə-*, Spanish *a*, Hindi *-ko*, Miskitu[8] *-ra*

At the end of the previous section, I noted that in some cases, bans on strings of verbs can be overcome by insertion of an overt head between the verbs. I suggested that this head makes linearization possible, even when a strong phase contains two heads with the same label; if one of the offending v heads asymmetrically c-commands an XP which dominates the second v head, then **A** for the structure contains a linearization statement <v, XP>, and since the second v is in the image of XP it can be deduced that the second v follows the first.

Chaha, Spanish, Hindi, and Miskitu all have a case particle with an intriguing distribution. I will argue that the particle appears to break up DPs which would otherwise all have to be linearized in the same phase. We will see, again, that phase boundaries are

crucial, and that structures which would otherwise fall afoul of Distinctness can be rescued by insertion of functional material.

Chaha (a Semitic language of Ethiopia) exhibits a form of object shift, obligatorily moving specific objects to a position which is higher than non-specific ones:

(40) a. C'amʷɨt   nɨmam   ambɨr   tɨcəkɨr

      C'.   normally cabbage cooks

      'C'amʷɨt normally cooks cabbage'

      b.*C'amʷɨt   ambɨr   nɨmam   tɨcəkɨr

      C'.   cabbage   normally   cooks

(41) a. *C'amʷɨt   nɨmam   ambɨr   xʷɨta tɨcəkʷɨnn

      C'.   normally cabbage the   cooks

      b. C'amʷɨt ambɨr   xʷɨta nɨmam   tɨcəkʷɨnn

      C'.   cabbage the normally   cooks

      'C'amʷɨt normally cooks the cabbage'

When an SOV sentence contains two animate NPs and the object is specific, the object is obligatorily marked with a prefix *yə*:

(42) a. Gɨyə yə-fərəz nəkʷəsənɨm

    dog **yə** horse bit

‘A dog bit a (specific) horse’

b. Gɨyə fərəz nəkəsəm

    dog horse bit

‘A dog bit a (non-specific) horse’

We can analyze these facts in terms of Distinctness. The account will involve making some unsupported guesses about Chaha's (rather sketchily explored) syntax, but none of them are particularly outlandish. The general idea will be that *yə-* appears to distinguish between DPs which are too close together to linearize.

Let us suppose, first of all, that the subject always raises to Spec TP, and that object shift involves overt movement to a specifier of vP (that is, to the edge of vP). There is some reason to think that the verb always c-commands the subject; negation on the verb licenses NPIs in both subject and object position, for instance:

(43) a.   Namaga attɨkar ansɨyə

      Namaga anything NEG-bought

      'Namaga didn't buy anything'

b. * Namaga attɨkar sɨyəm

      Namaga anything bought

(44) a. attɨsəβ bɨkʼʷrə ansɨyə
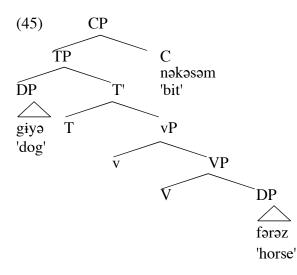
    anyone mule NEG-bought

    'Anyone didn't buy a mule'

 b. * attɨsəβ bɨkʼʷrə sɨyəm
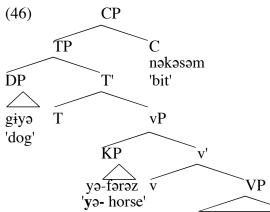
    anyone mule bought

Thus, I will depict the verb as having raised to a C which takes its complement on the

left; I will leave aside the problem of how to reconcile this with the LCA, having no way

at the moment to choose among the various technical options available (one possibility,

following Kayne (1994), would be to move TP to the specifier of CP).

  Let us consider, first of all, the example in (44b), in which object shift has not taken

place:

(45)

```
                CP
              /    \
            TP       C
          /   \      nəkəsəm
        DP     T'    'bit'
        /\    /   \
      giyə   T      vP
      'dog'        /   \
                  v      VP
                        /   \
                       V      DP
                             /\
                           fərəz
                           'horse'
```

(45) is linearizable; the vP is a strong phase containing only one pronounced element,

which is thus trivial to linearize, and the next strong phase contains two pronounced

elements with different labels. (45) therefore obeys Distinctness.

Next consider (44a), where object shift to Spec vP has taken place. Here the object

must be marked with *yə-*, which I will analyze as heading a KP dominating DP:

(46)

```
                    CP
              _____|_____
            TP             C
         ___|___          nəkəsəm
       DP       T'        'bit'
       /\      __|__
      giyə    T     vP
      'dog'      ___|___
                KP       v'
               /\      __|___
          yə-fərəz  v      VP
          'yə- horse'      /\
```

Because the object has undergone object shift, it has moved to the edge of the strong

phase vP and is therefore linearized with the higher phase. (46) obeys Distinctness, but

only because of the KP dominating the lower DP. Linearizing this tree crucially makes

use of the pair <DP, KP>. This pair obeys Distinctness, and linearization succeeds. If

the lower KP were not present, however, the pair would be <DP, DP>, and could not be

included in A; linearization would then fail.

Additional evidence for the approach to *yƏ-* developed here comes from the

behavior of sentences with more than two arguments. Here the indirect object must

always be marked with *yə-*, regardless of specificity:

(47) C'amʷɨt yə-at mɨs fɨraŋk awəčnɨm

C'amʷɨt **yə** one man money gave

'C'amʷɨt gave money to a (specific or non-specific) man'

Thus, *yə-* is not simply a marker for specific direct objects. These facts follow naturally

from the account. In (47), there is no way to avoid having the indirect object in the same

phase with another DP; if it shifts it is in the higher phase with the subject, and if it does

not it is in the lower phase with the object. *yə-* is therefore obligatory, regardless of

specificity; informally, it acts as a 'spacer', which appears whenever DPs are too close

together. As we should expect on this account, sentences with multiple internal

arguments marked with *yə-* are impossible:

(48)   a. C'amʷɨt yə-tkə   xʷɨta gɨyə awəčnɨm

              C'amʷɨt **yə** child the   dog   gave

         'C'amʷɨt gave the child a/the dog'

         b. *C'amʷɨt yə-tkə   xʷɨta yə-gyə awəčnɨm

              C'amʷɨt **yə** child the   **yə** dog   gave

Hindi, Spanish, and Miskitu are all like Chaha in having a morphological marker

which appears on specific animate direct objects[9] and all indirect objects. In Hindi the

marker is *-ko*, in Spanish it is *a*, and in Miskitu it is *-ra* (Hindi from Mohanan (1994, 79,

80, 85), Spanish from Torrego (1998, 21, 40), Miskitu from Ken Hale, personal

communication):

(49) a. Ravii (ek) gaay kʰariidnaa caahtaa hai

Ravi   one cow to-buy   wish   AUX

'Ravi wishes to buy a (non-specific) cow'

b. Ravii ek   gaay-ko kʰariidnaa caahtaa hai

Ravi one cow **KO** to-buy   wish   AUX

'Ravi wishes to buy a (specific) cow'

c. Ilaa-ne   ek   haar *(-ko) utʰaayaa

Ila   ERG one necklace **KO** lifted

'Ila lifted a necklace'

d. Ilaa-ne   mãã -ko   baccaa diyaa

Ila   ERG mother **KO** child   gave

'Ila gave a/the child to the mother'

(50) a. Laura escondió un prisionero durante dos años

Laura hid   a prisoner   for   two years

'Laura hid a (non-specific) prisoner for two years'

b. Laura escondió a un prisionero durante dos años

Laura hid   *A* a prisoner for   two years

'Laura hid a (specific) prisoner for two years'

c. Golpeó (*a) la mesa

he/she-hit *A* the table

'He/she hit the table'

d. Describieron   un maestro de Zen al   papa

they-described a   master   of Zen *A*-the pope

'They described a Zen master to the pope'

(51) a. Yang aaras (kum) atkri

I   horse   a   bought

'I bought a horse'

b. Yang aaras-ra   atkri

I   horse *RA* bought

'I bought a/the (specific) horse'

c. Yang tuktan ai yaptika-ra   brihbalri

I   child his mother *RA* brought

'I brought the child to his mother'

Also as in Chaha, these markers cannot normally appear on multiple DPs in a sentence; in ditransitive sentences, the marker must appear on the indirect object and cannot appear on the direct object (Hindi from Mohanan (1994, 85), Spanish from Torrego (1998, 133-4), Miskitu from Ken Hale, personal communication)

(52) a. ilaa-ne   mãã   -ko baccaa diyaa

     Ila   ERG mother ***KO*** child   gave

    'Ila gave a/the child to the mother'

   b. *ilaa-ne   mãã   -ko   bacce-ko diyaa

     Ila ERG mother ***KO*** child ***KO*** gave

(53) a. Describieron   un maestro de Zen al   papa

     they-described a   master   of Zen ***A***-the pope

    'They described a Zen master to the pope'

   b. *Describieron   a un maestro de Zen al   papa

     they-described ***A*** a master   of Zen ***A***-the pope

(54) a.   Yang tuktan ai yaptika-ra   brihbalri

     I   child his mother ***RA*** brought

     'I brought the child to his mother'

   b.   *Yang tuktan -ra   ai yaptika-ra brihbalri

     I   child   ***RA*** his mother ***RA*** brought

Torrego attributes to Strozer (1976) the discovery that there is in fact a class of verbs in Spanish that do in fact allow both objects of ditransitives to be marked with *a*, somewhat marginally (Torrego (1998, 134)):

(55)   ?Mostré/   presenté   al   alumno al   profesor

        I-showed/I-introduced *A*-the student *A*-the teacher

        'I showed/introduced the student to the teacher'

Torrego offers arguments that the direct objects of such verbs are structurally higher than

those of verbs like the one in (61); she suggests a general "exclusion of structures that

have [two DPs marked with *a*] in the same Case-checking domain" (Torrego 1998, 134),

which is certainly compatible with the approach developed here; if the direct object in

(61) can raise out of its strong phase into the strong phase occupied by the subject, then it

and the indirect object can be linearized separately[10].

It looks reasonable, then, to extend the account of Chaha *yə* to Hindi *ko*, Spanish

a, and Miskitu *-ra*, although the latter languages have word order which is freer than

Chaha's in ways which make it difficult to show that the same kinds of movements of

DPs are at stake. Thus, in this section, we have seen a nominal counterpart to the cases

of bans on adjacent verbs in the previous section; in terms of the theory developed here,

multiple DPs cannot be linearized if they are in the same strong phase, and functional

material is therefore added to keep the DPs sufficiently distinct for linearization to

succeed in these cases. In both the nominal and the verbal case, the relevant ban is

sensitive to strong phase boundaries, and can be circumvented by the addition of

functional structure.

3.   Embedding

In the previous section we discussed a number of cases which showed that linear adjacency was not sufficient to trigger Distinctness effects; in cases where a strong phase boundary intervened between the two potentially offending objects, linearization would succeed even if the objects were linearly adjacent. This was the case, for instance, in the Chaha example in (56):
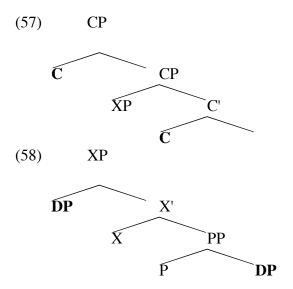
(56) Gɨyə [$_{vP}$ fərəz] nəkəsəm

    dog   horse   bit

    'A dog bit a (non-specific) horse'

In (56), the non-specific direct object need not be marked with *yə-*. In the account developed in the previous section, this was because the direct object has not undergone object shift to the edge of the vP phase; as a result, it is linearized within the vP phase and the subject is linearized in the higher CP phase. Because these two DPs are not linearized in the same phase, no Distinctness violation is incurred. The fact that the two DPs are linearly adjacent is irrelevant. In this section we will show that linear adjacency is not only not sufficient but also not necessary to trigger Distinctness effects; syntactic objects which are not linearly adjacent can still exhibit a Distinctness effect.

One of the other things we saw in the last section was that one way of circumventing Distinctness is to add more functional structure. In languages like Chaha, Hindi, Miskitu, and Spanish, for instance, one way of circumventing Distinctness violations is to embed one of two potentially offending DPs in a KP; similarly, in section

2.1, we reviewed a number of Distinctness effects involving multiple v heads which could be avoided by embedding one of the heads in a TP. I offered an account of this fact which made crucial reference to syntactic structure. Even when two syntactic objects α and β cannot be linearized directly because they have the same label, I claimed, the structure can be saved if one of them is embedded in a constituent X with a different label; the linearization statement <α, XP>, where β is in the image of XP, will make linearization of α and β possible.

Of course, the functional structure that was added in the cases discussed above also had the effect of breaking up linear adjacency between potentially offending objects, and one could imagine theories which made crucial use of this fact. In this section I will try to show that this would be a mistake. We will see that if material which linearly intervenes between two unlinearizable constituents is not structurally in a position to assist with linearization, linearization fails. In the introduction to this paper I suggested that we might expect something like this to be the case, offering the trees in (57-58):

(57)   CP

      C   CP

          XP   C'

              C

(58)   XP

      DP   X'

          X   PP

              P   DP

In both of (57-58), the boldfaced constituents are not linearly adjacent. The linearly intervening material saves the structure in (58) but not in (57), however. In (58), the ordering statement <DP, PP>, together with the fact that the image of PP contains the other DP, allows the two DPs to be linearized. In (57), by contrast, there is no consitituent asymmetrically c-commanded by the higher C that has the lower C in its image; all the intervening XP does is permit the construction of linearization statements <C, XP> and <XP, C>, which are mutually contradictory and hence unhelpful.

The cases of intervening functional material in the previous two sections were relevantly like the tree in (58); the introduced material formed a phrase (a TP in the case involving verbs in section 2.1, and a KP in the discussion of Case in section 2.2) which dominated the lower of the two potentially offending constituents. In the following sections we will consider some examples of the type in (57), where the linearly intervening material is useless for linearization because of its structural position.

3.1 Intervention failure: adverbs

One very straightforward case of the relevant type has to do with adverbs. Recall from the discussion in section 1.1 above that English and French both have processes of inversion which exhibit a Distinctness effect; they are blocked from occurring if two DPs would be left to the right of the verb:

(59)   a.   *"It's raining," told [the weatherman] [the anchorwoman]

       b.   *Je me demande oú   mange [Marie] [sa pomme]

            I wonder   where eats   Marie   her apple

These facts are unaffected by the distribution of adverbs (French data from Michel

DeGraff, personal communication):

(60)   a.   *"It's raining," told [the weatherman] **sadly** [the anchorwoman]

      b.   *Je me demande oú   mange [Marie] **habituellement** [sa pomme]

          I wonder   where eats   Marie   usually   her apple

This is what we expect. The adverbs in (60) do not dominate the second DP, and hence

are not useful for linearization; they only allow the construction of ordered pairs <DP,

AdvP>, <AdvP, DP>, which are mutually contradictory[11].

3.2   Intervention failure, part II: Polish

    Polish has a kind of agreement morphology which can appear in a number of places

(often analyzed as a clitic; see Borsley and Rivero 1994, Embick 1995, Szegielniak 1997,

1999 for discussion). This agreement morphology appears most frequently on the

complementizer or the verb (though it can also appear on focused constituents):

(61) *Polish* (Adam Szczegielniak, personal communication)

    a.   On wie   że poszedł**eś** do kina

        he knows that went-2SG to movies

        'He knows that you went to the movies'

    b.   On wie   że**ś**   poszedł do kina

        he knows that-2SG went   to movies

Polish also allows declarative clauses to have two complementizers. When two complementizers appear, however, agreement must be placed on one of them (in fact, it must appear on the second complementizer, a fact Szczegielniak (1999) discusses):

(62) *Polish* (Adam Szczegielniak, personal communication)

    a.   On wie   że żeś poszedł do kina

            he knows that that-2SG went   to movies

    b.   *On wie   że że poszedłeś do kina

             he knows that that went-2SG to movies

This state of affairs seems amenable to an account in terms of Distinctness. In (62b), we would say, the two Cs cannot be linearized, since linearization statements like <C, C> are useless for linearization. In (62a), by contrast, one of the Cs has the agreement clitic adjoined to it, and this complex head is sufficiently distinct from a bare C head for linearization to be possible. How to formalize this is not entirely clear. We might define head-adjunction in such a way that the lower C in (62a) is dominated by a node with the label of the clitic. Alternatively, we might allow linearization statements to make reference to all the features on the linearized syntactic objects; for phrases, this might simply be a label, but for heads it might reasonably be all the features that are present in the syntax (including, in this case, the agreement features introduced by the clitic).
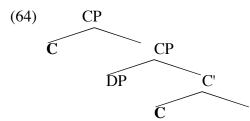
The Polish case has another interesting property; the requirement that agreement appear on the lower complementizer remains even if a topicalized NP linearly intervenes between the two complementizers (Szczegielniak 1999 and personal communication):

(63) a.   On myślał że   Janowi żeś   dał książkę

            he   thought that John   that-2SG gave book

            'He thought that you gave the book to John'

    b. * On myślał że   Janowi że dałeś   książkę

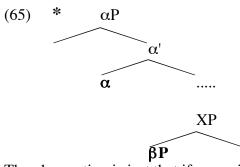   he thought that John   that gave-2SG book

Here, then, we have a case of a Distinctness effect which is demonstrably not about linear adjacency; the two complementizers in (63) are not linearly adjacent, but must still be distinguished by the agreement clitic. This is what we expect, since the linearly intervening material does not introduce a node that dominates the lower C, in this case. The relevant tree would be the one in (64):

(64)   CP

Here the intervening DP is of no use in linearizing the two Cs; it allows the construction of linearization statements <C, DP> and <DP, C>, but these contradict each other.

4   Specifiers

This section will discuss a number of cases of the form in (65), where α and βP interact in a way characteristic of Distinctness:

(65) * αP

$$
\begin{array}{c}
\alpha P \\
\diagdown \\
\alpha' \\
\diagup \diagdown \\
\alpha \quad\quad ..... \\
\\
XP \\
\diagup \diagdown \\
\beta P \quad\quad X'
\end{array}
$$

The observation is just that if no projection headed by a non-trace dominates XP and is

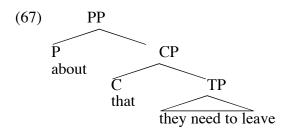dominated by αP, and if α and β have the same label, then a Distinctness effect appears.

To get this result, we will need to rule out two contenders for ordering statements

that would successfully linearize α and βP. The first of these is <α, XP>; it will have to

be the case that XP does not, in the relevant sense, dominate βP (a conclusion also drawn

by Kayne (1994) on independent grounds). In fact, we will see cases in which XP is a

strong phase, lending further support to the crucial assumption that the edge of a strong

phase is linearized with the higher phase (following Nissenbaum (2000)). Second, an

ordering statement like <α, βP> will have to be useless in this case; that is, the

distinction between a head and a maximal projection will have to not be enough to make

the ordering statement useful. This could be because the syntax does not in fact make

this distinction, at least in the way it labels nodes. Alternatively, we might simply claim

that ordering statements like <X, XP> are unacceptable, suggesting as they do that the

head of a maximal projection could be ordered with the maximal projection itself. I will

not try to choose between these options here, though both have potentially intriguing

consequences[12].

Armed with these assumptions, let us go on to consider some cases of the relevant type.

4.1   Case resistance

Stowell's (1981) Case Resistance Principle is meant to account for facts like (66):

(66) *They're talking about [that they need to leave]

The ill-formedness of (66) might be another case of Distinctness, if we assume that prepositions and complementizers have something in common (not an unreasonable assumption, given the frequency with which prepositions are used as complementizers)[13].

Consider this tree for part of (66):

(67)

```
        PP
       /  \
      P     CP
    about  /  \
          C     TP
         that  /  \
        they need to leave
```

Recall that CP is a strong phase. When the phase above CP is spelled out, then, the nodes to be linearized will include P (*about*), C (*that*), and CP (*that they need to leave*). A cannot contain any pairs involving any of these nodes; both <P, C> and <P, CP> are ruled out by Distinctness.

Note that the Case Resistance Principle does not apply to interrogative clauses:

(68) They're talking about [what they should buy]

This is arguably related to the fact that such clauses behave as nominals when they are complements of nominals, in that they require *of* to be inserted[14]:
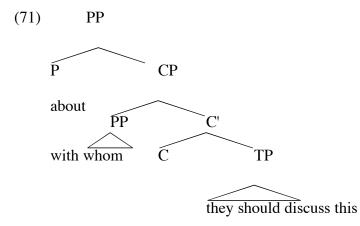
(69) the question *(**of**) [what they should buy]

Interestingly, Case Resistance effects seem to resurface in interrogatives when the wh-phrase is a PP. (70a) is somewhat stuffy-sounding in my dialect, but (70b) is ill-formed (and, I think, worse than (70c), suggesting that this is not simply a contrast of main clauses vs. embedded clauses):

(70) a. [With whom] should we discuss this?

b. * They're talking about [with whom they should discuss this]

c. They don't know [with whom they should discuss this]

The contrast in (70) is expected, again; in (71b), the P *with* and the PP *with whom* cannot be linearized:

(71)   PP

P   CP

about
         PP   C'

with whom   C   TP

                  they should discuss this

Here the objects to be linearized in the phase above CP include P (*about*) and PP (*with whom*). Linearization of these is impossible, on the assumptions outlined at the beginning of this section.

4.2   Relativization

Kayne (1977), Chomsky (1977, 1980), Cinque (1981), and Pesetsky (1998), among many

others, discuss a pattern of relativization in various Romance languages and in English

infinitival relatives. In these relative clauses, a PP may appear as a relative operator, but

not a DP:

(72)   a. a person [<u>with whom</u> to dance]

        b. *a person [<u>whom</u> to admire]

        c. a person [to admire]

(73)   a. l'homme [<u>avec qui</u>   j'ai   dansé]   [*French*: Pesetsky 1998, 341]

            the-man   with whom I-have danced

        b. *l'homme [<u>qui</u>   je connais]

            the-man   whom I know

        c. l'homme [que je connais]

            the-man   that I   know

Chomsky's (1977, 1980) classic account of these facts was in terms of "recoverability up

to deletion"; on this account, a DP relative operator like the ones in (72b) and (73b) is

required to delete because it can be recovered from the context, while PP operators, not

being recoverable, are not required to delete.

        Data like those in (74) raise a potential problem for this kind of account:

(74)   a. *a person [<u>whose uncle</u> to admire]

        b. *l'homme [<u>la femme de qui</u>   tu   as   insultée] [*French*: Pesetsky 1998, 343]

            the-man   the wife   of whom you have insulted

In the relative clauses in (74) the relative operator presumably contributes information which cannot be recovered if the operator is deleted. "Deletion up to recoverability", then, should allow these operators to escape deletion, which seems to be the wrong prediction.

An alternative account, which might fit naturally into the theory under development here, would say that the relative operator in these examples cannot be a DP because this would bring the DP operator unacceptably close to the D of the relative clause's head, making linearization difficult. If relative clauses are CPs, this is not an unexpected result; the relative operator, being on the edge of a CP phase, will be linearized with material in the higher phase, including the D of the relative clause head. The relativization data discussed above would follow straightforwardly.

If this account is on the right track, we are driven to an account of English tensed relatives in which the head of the relative clause and the relative operator are not linearized in the same phase, since the constraints discussed above do not hold of these relative clauses:

(75)   a. the man [whom I admire]

        b. the man [whose wife I insulted]

One option would be to posit structure intervening between the head and the operator which is not present in the relative clauses discussed above.

4.3   DP-internal syntax

Cross-linguistically, nominal arguments of nouns are often accompanied by functional

structure not found with nominal arguments of verbs. In English, for instance, the

complement of a noun is introduced by *of*:

(76) a.   They destroyed the city

      b.   [the destruction **of** the city]

The Chaha morphem yə-, which we encountered in section 2.2 above as a marker of

indirect objects of ditransitives and specific animate direct objects of monotransitives (a

distribution for which I tried to provide an account) also appears on possessors, without

regard to specificity or animacy:

(77)   yə-βet   wəka

        yə house roof-beam

      'the house's roof-beams'

Similarly, Torrego (1998, 40) notes that complements of derived nominals in Spanish can

sometimes be marked with *a*, and that such marking does not exhibit the animacy

restriction typical of *a* on direct objects of verbs:

(78)   a. Su amor al   dinero

          his love *A*-the money

        'his love of money'

        b. Aman   (*a) el dinero

          they-love *A* the money

'They love money'

Special functional structure may also appear on nouns which have arguments, rather than on the arguments themselves. In the Algonquian languages, sentences containing multiple third person arguments[15] make a distinction among the arguments based on their roles in the discourse: one argument is required to be *proximate* (proximate arguments are, roughly, those which refer to the topic of discussion or "point of view" of the discourse) and all the others are marked as *obviative*:
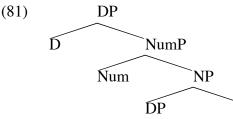
(79) a. Washkeetôp nâw mashq-ah   [*Wampanoag*]

man   sees bear   OBV

'The man (topic) sees a bear'

b. Washkeetôpâ-ah   nâw-uq   mashq

man   OBV see INV bear

'A man sees the bear (topic)'

Possessed noun phrases, however, exhibit different behavior: the possessed noun must be marked obviative, and the possessor must be treated as proximate, regardless of the status of the referents of these nouns in the discourse:

(80)   washkeetôp wu-hshum   -ah

man   3   daughter-in-law OBV

'the man's daughter-in-law'

Some of these facts about the arguments of nouns are among those which have classically been attributed to the Case Filter; nouns are supposed to be unable to license Case, at least in some languages. A Distinctness-based account might be able to provide

some insight into these facts, and the account would have the virtue, unlike previous

Case-based accounts, of offering an explanation for why it is <u>nouns</u> that require

additional structure to be introduced when they take nominal complements[16]. Consider

an NP with a DP argument specifier. Here I assume that arguments of nominals, like

arguments of verbs, are introduced in the specifiers of Larsonian shells; I also assume,

following Ritter (1988, 1991) that there is another functional projection between DP and

NP, perhaps headed by Num:

(81)

```
           DP
          /  \
         D    NumP
             /    \
           Num     NP
                  /  \
                 DP   N
```

The tree in (81) is relevantly like the one in (65). D asymmetrically c-commands NP, but

if the specifier position occupied by D is understood as not being fully dominated by NP,

then DP will not be in NP's image and D and DP still cannot be linearized[17].

5   Lexical and functional heads

The preceding accounts have all involved interactions between functional heads,

and hopefully have demonstrated that a condition of Distinctness applying to functional

heads can account for a number of intriguing phenomena. In this section I will show that

in fact we need to limit Distinctness to interactions between functional heads; relations

between lexical heads seem to be able to freely violate Distinctness.

Assuming that this is so, we might ask why it should be so. Recent work in

Distributed Morphology suggests a possible answer. It has been suggested (Alec

Marantz, personal communication; Chomsky class lectures, 2001) that Insertion of vocabulary items might be Late Insertion (in the Distributed Morphology sense; that is, insertion after Spell-out) just for functional heads, and that lexical heads might undergo Early Insertion. A full defense of this claim would take us too far afield[18], but its usefulness for our present purposes seems clear. If linearization takes place at a point in the derivation at which lexical heads have been inserted but functional heads have not, then the distinction made by Distinctness seems particularly natural. The syntax is able to distinguish between lexical heads even if they have the same label, since the lexical item itself has been inserted by the time linearization applies. Less information is available about functional heads, and the distribution of functional heads is therefore subject to Distinctness.

Let us consider the evidence that suggests that Distinctness is indeed a constraint on functional heads specifically.

5.1 Double infinitives revisited

Longobardi offers one general class of counterexamples to the double-infinitive filter described above, which is of interest here. Restructuring infinitives may freely violate the double-infinitive filter, and restructuring becomes obligatory when a violation of the filter is at stake:

(82) a. Giovanni comincia a volerlo   fare

    Giovanni begins   to want-INF-it do-INF

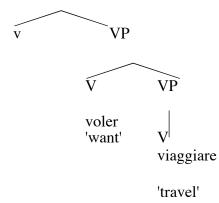   b. *Giovanni comincia a voler farlo

The obligatory nature of restructuring in (82) is indicated by the obligatory clitic climbing. Note that the clitic climbing is not required because the clitic must intervene between the two verbs in order for the example to be well-formed; (83) is also well-formed, presumably because *volere* selects for a restructuring infinitive, though there are no clitics in this example to undergo clitic-climbing:

(83) Giovanni comincia a voler   viaggiare da solo

      Giovanni begins   to want-INF travel-INF alone

Wurmbrand (1998, to appear) argues convincingly that restructuring infinitives lack functional structure, consisting simply of a VP. In her approach, a sentence like (83) would contain the partial structure in (84):

(84)   vP

```
        vP
       /  \
      v    VP
          /  \
         V    VP
       voler   |
       'want'  V
            viaggiare
             'travel'
```

In (84), there is no v associated with the lower verb. If it is true that roots like V and N lack syntactic features entirely, then Distinctness is satisfied here. The instances of Distinctness discussed above have involved v heads which need to be linearized. But in this case the lower verb lacks a v head, and indeed has no label at all; the pair <v-*voler*, *viaggiare*> can therefore appear in A.

5.3 Construct state

Section 4.3 discussed contrasts like the one in (85):

(85) a. *[the destruction [a city]]

b. [the destruction [of a city]]

The problem in (85a), on the theory developed here, was the difficulty of linearization the

D *the* with the DP *a city*; an ordering statement of the form <D, DP> is ruled out by

Distinctness. In (85b), on the other hand, *the* and *a city* can be linearized; the PP node

which dominates *of a city*, for instance, is asymmetrically c-commanded by *the*, so the

statement <*the*, *of a city*> will serve to indirectly linearize the two D-labeled nodes.

Another way of avoiding the problem in (85a), of course, would be to omit one or

both determiners. Omission of the higher determiner is indeed a cross-linguistically

popular approach to expressing nominal possessors, going by the name of construct state.

In Hebrew, for instance, possession may be indicated either with a structure like that in

(85b) (given in (86a)) or by the use of a construct state nominal like the one in (86b).

The examples in (86) are synonymous:

(86) a. ha-bayit   ßel ha-mora

the house of the teacher

b. beyt   ha- mora

house the teacher

A nominal like (86b) should pose no problems for linearization, since there is only one

determiner. Crucially, construct state nominals cannot contain two determiners:

(87) *ha-beyt ha-mora

Irish also exhibits construct state nominals[19]:

(88) a. hata an fhir

     hat the man-GEN

  'the man's hat'

  b. *an hata an fhir

Interestingly, in cases of multiply embedded construct state nominals, all the nouns

except the most deeply embedded one not only must lack determiners but must be in the

nominative (unmarked) case, rather than in the genitive case (Ken Hale, personal

communication, Bammesberger (1983, 33)):
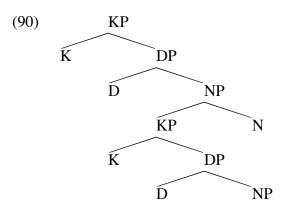
(89) a. hata fhear an tí

     hat man the house-GEN

  'the hat of the man of the house'

  b. *hata an fhear an tí

  c. *hata (an) fhir   an tí

     hat the man-GEN the house-GEN

We might take this as an indication that all of the nouns other than the most deeply

embedded one must lack all functional structure; not only must D be missing, but K(ase)

must be missing as well. This will follow, on the account given here, as long as there are

no projections that dominate the lower KP and are asymmetrically c-commanded by the

higher K^{20}. Consider a tree of a nominal taking a nominal argument. Here I will assume,

not crucially, that KP is above DP:

(90)

```
            KP
          /    \
        K       DP
              /    \
            D       NP
                  /    \
                KP      N
              /    \
            K       DP
                  /    \
                D       NP
```

If we assume as before that the maximal functional projection associated with an N is a phase (thus, in this tree, that KP is a phase), then the problem in (91) is that of linearizing the higher K with the embedded KP. If the assumptions about specifiers sketched in the preceding section are correct, then linearization statements like <K, NP> will be of no use in this case; NP apparently does not relevantly dominate its specifier, in the sense that is relevant for determining its image. The same chain of reasoning would hold if the higher N had a KP but lacked a DP; KP must therefore be absent, as we have seen.

      If the higher N had DP and lacked KP, we might expect the result to be well-formed; <D, KP> should certainly be acceptable by Distinctness, and would allow D and KP to be linearized. One possibility is that N-to-D-to-K movement makes the D of the lower nominal visible from the outside, triggering a Distinctness effect.
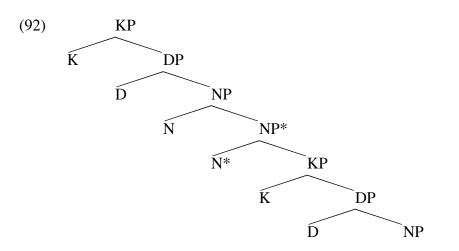
      Finally, if the higher nominal lacks functional structure altogether, the result is obviously acceptable. Distinctness does not apply to ordering of lexical heads, which by hypothesis have no labels, so a nominal which consists simply of an N will never be prevented by Distinctness from being linearized.

The Irish example in (88a) above (repeated here as (91)) raises another question, however:

(91)   hata fhear an tí

         hat man   the house-GEN

         'the hat of the man of the house'

Even if we grant that the theory sketched above accounts for why *fhear* 'man' must lack both K and D, why do these restrictions apply to *hata* 'hat'? We might expect that the intervening N *fhear* should be able to act as a "spacer", separating the functional heads of the highest nominal from those of the lowest:

(92)

```
            KP
           /  \
          K    DP
              /   \
             D     NP
                  /   \
                 N     NP*
                      /   \
                    N*     KP
                          /   \
                         K     DP
                              /   \
                             D     NP
```

Here we might expect the N *fhear* (marked on the tree above as N*) to intervene between the higher K and the lower KP. Recall from the section 4, however, that specifiers are not considered to be part of the image of the XPs of which they are specifiers; XP does not dominate its specifier, in the relevant sense. If the embedded nominal arguments in (92) are each specifiers of NP, then the facts follow; NP* effectively does not dominate the lower KP, just as the highest NP does not dominate NP*. No amount of embedding

should change this result; only one nominal (the most deeply embedded one, in this case) should be able to have functional structure.

In this section we have seen that one way to circumvent Distinctness when a nominal takes a nominal argument is to eliminate functional structure from one of the nominals. However, nothing that we have said so far guarantees that it should be the possessor that retains functional structure and the possessee that lacks it. We might expect to find examples of the opposite kind, in which the possessor is the nominal that loses its functional structure and appears as a bare N. Hungarian may offer an example of the relevant kind.

Hungarian possession may be expressed in either of two ways. In one, the possessor is marked with dative Case, and appears to the left of the possessee's determiner (Szabolcsi 1994); following Szabolcsi, let us take this to mean that the possessor has moved to a high specifier within the possessed DP:

(93) Mari-nak   a   kalap-ja   -i

        Mari DAT the   hat   POSS   PL

        'Mari's hats'

The possessor may also appear in the nominative case, which is unmarked. When it does so, it must lack a determiner (see Szabolcsi (1994) for convincing arguments for this) and appears to the right of the possessed DP's determiner:

(94) (a) Mari kalap-ja   -i

        the Mari hat   POSS PL

This type of possession, then, involves stripping the possessor of its determiner and Case morphology, and we might harbor the suspicion that the possessor in these examples has had all of its functional material removed. On this view, this type of Hungarian possessive construction is like a construct state possessive construction, except that the DP with its functional material removed is the possessor rather than the possessee.
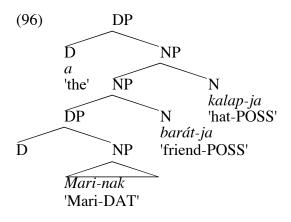
Hungarian nominative possession exhibits an intriguing property which the theory developed here captures, and which is reminiscent of some of the Irish facts just discussed. Consider three nominals α, β, and γ, such that α is the possessor of β and β is the possessor of γ. In cases of this type, Szabolcsi (1994) notes a striking generalization; if α is a dative possessor, then β must also be one:

(95) a. Mari barát -ja   kalap-ja   NOM NOM

          Mari friend POSS hat   POSS

            'Mari's friend's hat'

      b. Mari barát   -ja   -nak a   kalap-ja   NOM DAT

          Mari friend POSS DAT the hat   POSS

      c. Mari-nak a barát-ja-nak a kalap-ja   DAT   DAT

      d. *a Mari-nak barát-ja kalap-ja   *DAT NOM

If we are correct in assuming that dative possessors raise to a high functional projection in DP, while nominative possessors remain embedded within DP and lack any functional material of their own, then these facts follow. The ill-formed (95d) might be given the (somewhat simplified) diagram in (96):

(96)

```
                    DP
            ┌────────┴────────┐
            D                 NP
            a          ┌──────┴──────┐
          'the'        NP            N
                 ┌─────┴─────┐    kalap-ja
                 DP          N    'hat-POSS'
            ┌────┴────┐   barát-ja
            D         NP  'friend-POSS'
                  ┌───┴───┐
               Mari-nak
               'Mari-DAT'
```

Here the DP *Mari-nak* cannot be linearized with the D dominating *a*. The DP *Mari-nak* is the specifier of an NP (headed by *barátja* 'friend-POSS') which is itself the specifier of another NP (headed by *kalapja* 'hat-POSS'), but because of the special properties of specifiers that were discussed in section 4, it is not in the image of either NP. The only way to linearize it with the D *a*, then, would be to have an ordering statement <D, DP>, and Distinctness makes such statements useless. No such difficulty is encountered, for instance, by the well-formed (95c); here the most deeply embedded possessor is also dative, but it is embedded within another dative possessor, which has moved to a functional projection above the maximal DP, rendering Distinctness irrelevant here.

6   Deletion

Section 5 above focused on a series of cases in which the response to a potential

Distinctness violation was to remove functional structure from one of the potentially

offending phrases. We might wonder whether something similar is possible within a

lexical item. Throughout this paper I have been talking as though labels are the only

information syntax may make reference to when linearizing syntactic nodes, but this may

well be unreasonable. The syntax clearly makes use of other features (e.g., phi-features)

for purposes of other syntactic operations, and we might expect it to be able to make

reference to these features for linearization as well. If so, we might conjecture that

deletion of syntactic features from a functional head might be enough to make it

relevantly distinct from another functional head with the same label[21].

This line of reasoning might yield a new approach to the Person-Case constraint on

multiple clitics and agreement morphemes, discussed by Perlmutter 1971, Kayne 1975,

Bonet 1991, 1994, Anagnostopoulou (in progress), among others. This constraint bans

first or second person direct objects when an indirect object is also present:

(93) a.   John showed **me 'em**

      b.   *John showed **'em me**

(94) *__Me__   __li__   ha recomanat   la senyora Bofill   [*Catalan*:

         me-ACC him-DAT has recommended the Mrs.   Bofill   Bonet 1994, 33]

These instances of multiple cliticization are presumably cases in which multiple

syntactically similar objects are all in the same area of the structure, and in principle we

might expect such examples to simply be unlinearizable, and hence ill-formed. We might

account for their surprising well-formedness in terms of a last-resort strategy of feature deletion; when linearization would otherwise fail, one of the clitics has most of its features deleted, rendering it distinct from the other. One of the deleted features is the Person feature; following much of the morphological literature, I take third person to be equivalent to the lack of a person feature. In other words, examples like (94) above never surface with a first person accusative clitic; this clitic will always have its person feature (perhaps among other features) deleted, and become third person.

Something like this strategy of deletion might be more generally available for dealing with movement to multiple specifiers. Such movement, assuming it exists, poses a problem for the theory developed here, as it seems to involve a particularly straightforward case of multiple syntactically adjacent objects with the same syntactic properties. In fact, I have claimed in other work (Richards 1997, 1998) that in cases of movement to multiple specifiers, the highest specifier differs from all the other specifiers in certain properties (notably, in being subject to island constraints), which I tried to formalize in terms of the Principle of Minimal Compliance. It is conceivable that a principle of this kind could be made to follow from Distinctness; all the specifiers under the first one have some of their features deleted as a last-resort strategy to allow linearization, and this deletion has effects on their syntactic properties.

7 Linearization and the derivation

At the beginning of this paper I stated that I would be assuming, following Chomsky (1995, 2000, 2001), that syntactic trees are not linearized until they undergo Spell-out.

This is one respect in which Chomsky's approach differs from Kayne's (1994); Kayne assumes that the LCA must hold for the entire derivation.

Chomsky's approach to linearization has been useful at several points in the discussion. For example, I made use of it in my account of the contrast in (95):

(95) a. *John was seen __ leave

      b. Who did you see __ leave?

The account developed above claimed that the crucial difference between (95a) and (95b) has to do with the presence of a transitive vP dominating *see* in (95b) but not in (95a). Because this vP forms a strong phase boundary, the v of this vP, which is on the edge of a strong phase, is linearized in a different phase from the v of the embedded verb. This allows a potential Distinctness violation to be avoided in (95b), because Distinctness only applies to the output of Spell-out, not to the whole derivation. If Distinctness did apply to the whole derivation, we might expect it to rule out (95b) as well, assuming that there is a point in the derivation at which the v of the higher clause and the v of the lower clause are both present in the tree, though they are spelled out in different phases.

On the other hand, there are also examples in which it might be useful to follow Kayne and assume that linearization must be successful for the entire derivation. Recall, for example, the facts about Spanish *a* that were discussed in section 2.2 above. We saw there that *a* appears on specific animate direct objects of monotransitives, and on all indirect objects of ditransitives. The account I developed claimed that *a* marks direct objects just when they undergo object shift to the specifier of vP and become too close to the subject to be linearized.

In fact, however, the Spanish facts do not change if the subject undergoes raising to a higher clause (Karlos Arregi, personal communication):

(96) a.   Laura parece haber   escondido un prisionero durante dos años

             Laura seems to-have hidden   a   prisoner   for   two years

             'Laura seems to have hidden a (non-specific) prisoner for two years'

     b.   Laura parece haber   escondido a un prisionero durante dos años

             Laura seems to-have hidden   *A* a prisoner for   two years

             'Laura seems to have hidden a (specific) prisoner for two years'

One way of dealing with the fact in (96) would be to claim that the account given above of Spanish *a* is an explanation for why Spanish is designed as it is. We might say, for instance, that Spanish case-assignment works in the particular way that it does because, in ordinary monoclausal sentences, the distribution of *a* will prevent Distinctness violations. In the case of raising examples, we could say, the syntactic mechanisms that are responsible for the distribution of *a* in non-raising examples simply remain unchanged.

An alternative account, however, might say that Distinctness must hold for the entire derivation; *a* must be present in (96) because there is a point in the derivation, after the object has shifted but before the subject has raised, at which the subject and the object are too close together to be linearized if both are DPs. Obviously, this account must say something about the cases in which movement appears to rescue Distinctness violations (like the example with multiple v heads discussed earlier in this section). Thus far, at least, all of the examples in which one of two syntactic objects moves out of a phase and

is thereby saved from a Distinctness violation are arguably examples in which the rescued object starts at the edge of the phase boundary. If this is generally the case, then we might develop an account of the relevant facts by refining our understanding of how Spell-out works. We would need to claim, essentially, that the material within a strong phase undergoes Spell-out and becomes opaque to further operations before the edge[22] is merged. Crucially, then, the edge of a phase would never be in a tree which also contained the interior of the phase[23].

I will not try to choose between these accounts here; more relevant examples need to be found and investigated, it seems to me.

8   Conclusion

This paper has concentrated on phenomena of a type which has been on the fringes of syntactic discussion for some time--namely, cases in which multiple adjacent instances of the same syntactic object are banned. I have tried to show that taking this phenomenon seriously can be fruitful in developing accounts of a number of recalcitrant facts.

One reason that there has been comparatively little work on a "syntactic OCP", I think, is that it has large numbers of apparent exceptions: instances in which syntactically identical objects are linearly adjacent. I have tried to argue here that the relevant phenomenon is sensitive not to linear adjacency, but to a more syntactic notion which follows straightforwardly from Kayne's (1994) theory about how linearization of the syntactic tree works. This notion of "syntactic adjacency", as we have seen, overlaps significantly with linear adjacency but is not identical to it. As a result, a number of apparent counterexamples can in fact be made to follow from the properties of the theory.

Whether all of the apparent counterexamples can be dealt with in this way is a question I will have to leave to future research.

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[1] For other work on a "syntactic OCP", see Mohanan (1994), Yip (1998), Anttila and Fong (2001), and references cited there.

[2] It will be crucial, however, that nodes dominating phonologically null lexical items *are* linearized. Some versions of Late Insertion might make this look like a natural distinction; the syntax "knows" that a trace is phonologically null, since it is the syntax which is responsible for making copies phonologically null, while a node which dominates a phonologically null lexical item is not identifiable as such until the lexical item is inserted (possibly after linearization takes place).

[3] We might also want A to contain pairs that would allow V and the DP (*sa pomme*) to be linearized, depending on whether the DPs are themselves strong phases.

[4] We might relate this to the fact that these languages have scrambling; it is possible to move nouns into each other's strong phases, in these languages, since they have case marking that distinguishes them sufficiently for linearization to succeed. Following

Fukui (1993), we might also consider a link between this kind of case marking and having the verb on the periphery; the projection occupied by the verb cannot be used to intervene between DP arguments and allow linearization, and thus rich case marking is required.

[5] By similar logic, the account developed here deals with an otherwise mysterious gap in English subcategorization; although, as we have seen, there are several transitive verbs that take bare infinitive complements, there seem to be no intransitive verbs that do. Such verbs would always yield unlinearizable sentences, just as in the passive case above; there would be no transitive vP to provide a strong phase boundary to separate the two verbs.

[6] The same reasoning yields a new account of *wanna*-contraction, which seems quite natural; *wanna*-contraction is possible just in case *want* and *to* are both linearized in the same phase. Ausín (2000) has independently discovered this.

[7] Many thanks to Degif Petros, the source of all the Chaha examples.

[8] Thanks, too, to Ken Hale, for his help with the facts of Miskitu.

[9] In Hindi, the marker can apparently also appear in inanimate objects, as long as they are definite (while the crucial property for inanimates is specificity; Mohanan (1990, 79-80)).

[10] Another possibility is that Spanish has, in addition to the *a* which heads a KP, another *a* which is a real preposition.

[11] In this context it is interesting to consider the notion of "PF Adjacency" as developed by Bobaljik (1995), which also needs to make a crucial distinction between negation

(which heads a projection dominating the verb but not inflection) and adverbs (which are simply adjoined to a VP-level projection) for purposes of intervention between the verb and inflection. We might, for instance, consider constructing a theory similar to that of Bobaljik (1995), which would allow the verb and inflection to combine just in case the minimal set of statements necessary to linearize them included an ordered pair of the form <Infl, V>. For instance, it might be the case that the system considers the minimal number of ordered pairs necessary for linearization, and that one possible output of an ordered pair is not a linearly ordered set of terminals but a complex head, if the morphological conditions are right.

[12] The first might make the requirement that no projection of a trace appear in linearization statements look more sensible; if there is no distinction made in these statements between minimal and maximal projections, then the maximal and minimal projections of a trace should be treated equally (and hence should be equally unlinearizable). On the other hand, failure to distinguish between minimal and maximal projections raises troubling questions about how, for instance, a head is linearized with respect to the material dominated by its maximal projection (for instance, the complement of X may follow X, but does not in any obvious sense follow XP).

[13] At the beginning of this paper I suggested that the syntactic features to which Distinctness is sensitive are located only in functional heads and not in lexical heads (following Pesetsky 1995...., and their assumption that lexical heads are essentially

featureless as far as the syntax is concerned). For this claim to be maintained here, P and C will both have to be functional heads.

[14] It is tempting to try to account for the failure of Case Resistance with interrogative clauses in terms of Distinctness; we might say, for example, that the wh-phrase intervenes between the higher P and the lower C. Such an account would be difficult to reconcile with the theory as it has been developed so far, however; as Distinctness is currently formalized, a specifier between two heads does not relevantly intervene between them (see section 3 above for evidence for this conclusion). The requirement of *of*-insertion in (44) would also be mysterious for such an account (it does not seem to be related to an interaction between the D-feature of the wh-phrase and the D of the higher NP, since even adverbial wh-phrases, which presumably lack a D-feature, require *of* here)

[15] In some languages (such as Wampanoag) obviation is limited to animate arguments.

[16] Of course, adjectives also classically have this property; in the account developed here, this would have to be an indication that APs and DPs share some functional structure. The functional structure of APs is sufficiently underexplored that it is difficult to prove this, though it does not seem unreasonable.

[17] Further work on the syntax of DPs might discover, of course, that there is more functional structure involved than I have posited here. This will not matter for our current purposes, as long as any other functional heads are headed by traces in the languages under consideration, so that the maximal projections cannot be considered for linearization. The current approach might predict that if there are languages in which the

other functional heads associated with the nominal are occupied by heads that do not undergo head-movement, such languages should be able to linearize nominal arguments without needing to add functional material to them.

[18] Briefly, one reason for thinking this is that Late Insertion seems to be useful primarily for determining the realization of functional heads. See Embick (2000) for discussion of one case in which early insertion of lexical items would seem to be desirable, avoiding complications in the description of Latin deponent verbs.

[19] Thanks to Ken Hale and Andrew Carnie for help with Irish facts.

[20] More specifically, if there are any such projections, it will be necessary that their heads undergo head-movement, so that they become irrelevant for linearization.

[21] We might achieve the same formal effect, and unify the account in this section with that given in the preceding section, by locating the features to be "deleted" in distinct functional heads, which can be omitted from the representation for purposes of Distinctness. I will not pursue this option further here, as it entails positing functional heads for which I have no other motivation to offer at present.

[22] Or perhaps just those elements of the edge which have uninterpretable features that will trigger further movement. We want the subject and the object in the English and French inversion cases discussed in section 1.1, for example, to be linearized together, even though the subject, by hypothesis, is on the edge of the vP phase.

[23] Movement to the edge of a phase would presumably have to involve a copying operation, followed by Spell-out, followed by merge of the copied object to the edge of the spelled-out phase.