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## **The Representation of Movement in *-ability* Nominalizations Evidence for Covert Category Movement, Edge Phenomena, and Local LF**

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### **1. Introduction**

Two questions are prominent in modern minimalist discussions: how abstract are the principles which govern grammar, and how far do syntax and the lexicon penetrate one another? We argue that very sharp data reveals the presence of a passive operation for *-ability* nominalizations which a) entails covert phrasal movement, b) a "long-distance" connection to an Edge, c) LF sensitivity, and d) the Chain Condition (following Chomsky (2001a), Pesetsky (2000), and Frampton and Gutman (2000), Fu, Roeper, and Borer (2001), Van Hout and Roeper (1998), Roeper and van Hout (1999)). Our argument moves in the same direction as other discussions of CP/DP parallelism (Svenonius (2003)(Hirawa (2005), Chomsky (2004)).

Although we couch the discussion in current minimalist terminology, we believe that the argument transparently requires an abstract notion of movement in whatever theory emerges in the future. If such a fundamental notion of movement is involved, then it should cover more ground. We argue in particular that it is a species of covert movement that predicts restrictions on there-insertion in nominalizations as well.

The heart of the argument pivots upon the following contrast, to which we shall return, discussed in Van Hout and Roeper (1998) and Roeper and van Hout (1999).

- (1) a. the learnability of grammar by children<sup>1</sup>
- b. \* children's learnability of grammar
- c. grammar's learnability by children

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<sup>1</sup>Note that the challenge does not lie with the noun *ability*:

- (i) the child's ability to learn grammar

- (2) a. the heritability of IQ by children  
 b. \* children's heritability of IQ  
 c. IQ's heritability by children.

There seems to be a thematic restriction on the specifier of the DP of *-ability* nominals. What blocks (1b) and (2b) with the Agent in the Specifier of the DP? Since (1a) and (2a) are possible, the nominalization clearly allows the Agent in a PP. Moreover, if something blocks (1b), exactly why does the same constraint not block (1c) with the Theme in the Specifier of the CP? Classic arguments to the effect that possessives are free in their interpretation would lead precisely to the prediction that they should allow an Agent there. Instead we find that a Theme can be preposed, but not an Agent. This argument realization pattern is precisely the same as the restriction on the subject of a verbal passive. Since *-Ability* nominalizations seem to coerce the same thematic restrictions on the DP Specifier position as passive does on the TP Subject position, we will argue that the Spec position is the long-distance subject of the underlying verb.

The same restriction holds for *-edness* where the passive morpheme *-ed* inside a nominalization is overt.

- (3) a. The team excluded John.  
 b. John was excluded by the team.  
 c. John's excludedness (by the team)  
 d. \* the team's excludedness of John  
 e. the excludedness of John (?by the team)

While (3e) may verge on the infelicitous, (3d) is so ungrammatical that it verges on incomprehensibility. Why can we not reconstruct the notion of Agent in the possessive of such a nominalization to equal (3a)?

We argue that passive is imposed by the inner *-able* or *-ed* affix and it prevents the presence of an agent in the DP-s subject position. That is, \*children's learnability is excluded for the same reason that we cannot say:

- 4) \*children are learnable.

In essence, Burzio's (1986) constraint applies inside nominalizations. Burzio's constraint formulated an observation about verbal passives.

Burzio's Constraint: Case absorption of object-case dethematizes the subject position: removes the Agent projection from subject position.

Extended to nominalizations, this constraint is apparently able to apply from within the VP (from Spec-VP to Spec-vP) to the Specifier of AP (*-able*), to the Specifier of NP (*-ity*), to the Specifier of the DP (see (7,8) below). It appears to be a kind of covert "long-distance" A-movement.

How do we formulate a Burzio-type constraint that is sufficiently abstract to capture its presence in both verbal and nominal structures? We argue that modern principles of minimalism are needed, in particular the notion of Edge. Before we address that question, we provide the argument in greater detail.

## 2. Nominalizations and the inner VP

The *-ability* nominalizations in (1) and (2) stand in stark contrast to traditionally discussed *-tion* nominalizations such as (5).

- (5) a. the enemy's destruction of the city  
b. the city's destruction by the enemy

Sentences like (5b) have been classically called the passive of a nominalization, while (1)-(2) involve the nominalization (*-ity*) of a passive (*-able*). So whereas (5) provides both passive and active versions, the morphologically passive *-ability* nominalization in (1)-(2) must always be passive. Evidently the Spec-DP position functions as a "subject" position and is therefore subject to the constraints on a subject. This demonstrates that Spec-DP can be a true Argument position, rather than an adjunct position.

A question arises, however: can we have a coherent notion of subject that fits both verbal and nominal forms? The difference between the position of Spec-TP, which dominates a vP in sentences (1)-(2), and Spec-DP which is generated above NP marker *-ity*, which must in turn dominate Spec-AP (*-able*), which in turn dominates vP, is quite large. Burzio's generalization has never been captured in a transparent way for passive, which is why it is a generalization and not a principle. Our data suggests, minimally, that the right explanation has to be more abstract than hitherto thought.

We will now reconstruct the relevant structure and then show where current minimalist concepts meet the explanatory challenge. First, arguments from Fu, Roeper and Borer (2001) show the existence of a VP inside nominalizations. For instance, one can add adverbs and anaphor *do so*, each of which are a mark of a VP.

- (6) VP anaphor:  
a. John explanation of the facts, and Mary's doing so too  
b. \* John's version of the facts and Mary's doing so too

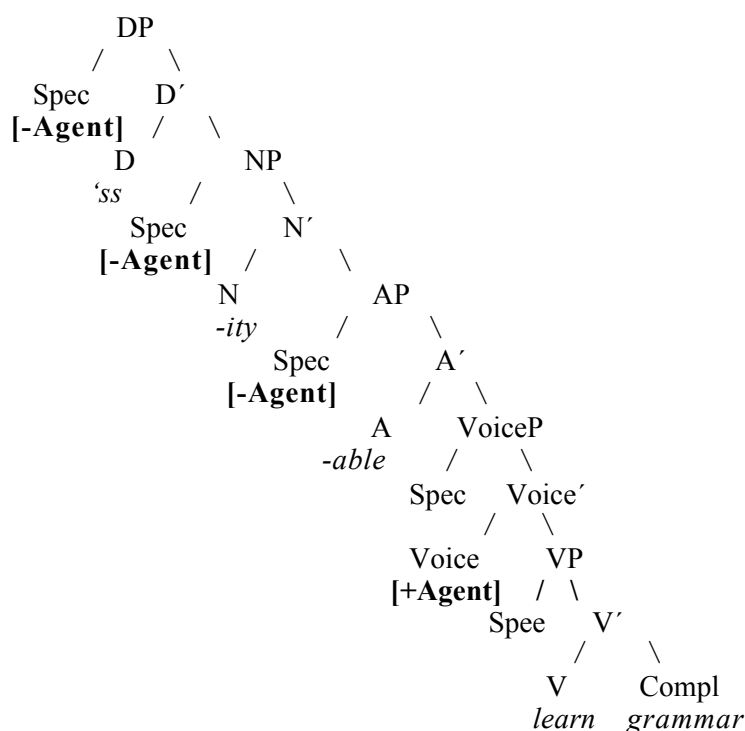
Adverbs:

- c. John's departure to Hawaii quickly
- d. \* John's trip to Hawaii quickly

These differences are captureable with a structure that involves a nominalizing affix above the VP. Where there are two morphological affixes, we then have the structure in (7.8), which shows the putative impact of *-able* for a dethematized Subject Specifier position, marked here as [-Agent] all the way up the tree (using VoiceP from Kratzer (1994), see also Hale and Keyser (2001) and Chomsky's (1995) notion of little *v*). The locality of argument projection can be maintained under the assumption that as the verb moves up and picks up affixes, it carries its argument [-Agent] projection with it:

learnable+ity      learn + ab;le      learn  
 Spec <=-AG      Spec ←<== -AG      Spec <== -AG  
 <=====      <=====      <==

(4)



The goal is to economically capture how the suffix *-able* patterns with verbal passives in excluding subject Agents as illustrated in (8e).

- (5) a. The grammar was learned by children.  
 b. \* The children are learned.  
 c. The grammar is learnable by children.  
 d. \* The children are learnable.  
 e. \* children's learnability of grammar

In both instances where passive is present, the subject does not allow the Agent. This restriction on the subject position is inherited when *-ity* is added as (9e) shows. Connecting the notion of passive to the notion of morphological inheritance (Randall (1982)) suggests assimilation to the notion of movement.

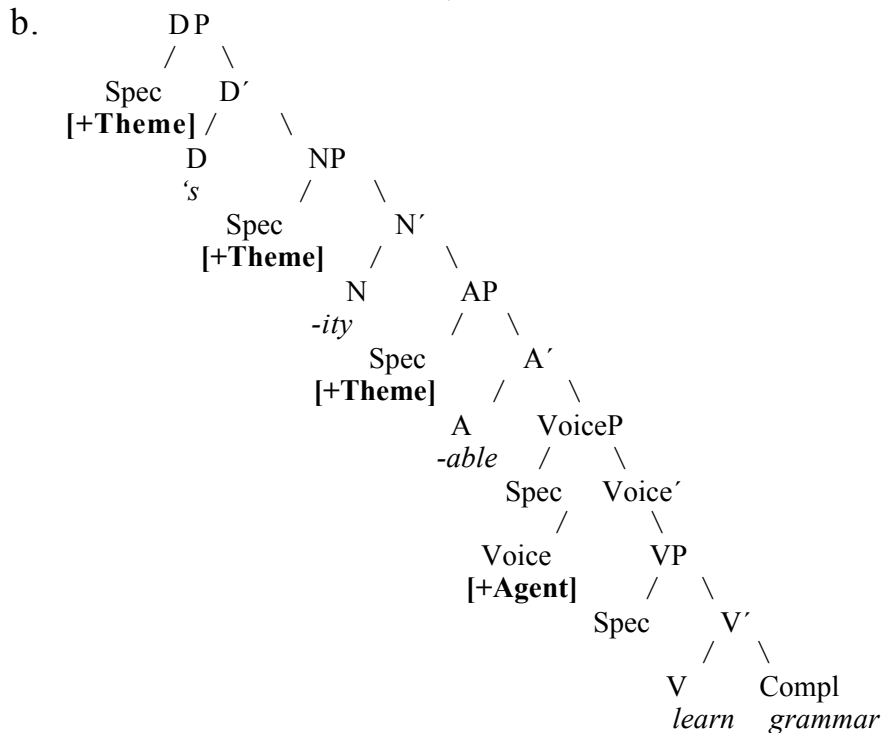
There is one striking difference between passive *-ed* and *-able*, however: the object must move in the verbal passive, but can remain in a prepositional phrase in the nominal passive; compare (9b) and (9d).

- (6) a. The grammar was learned  
 b. \* It was learned of the grammar  
 c. grammar's learnability  
 d. the learnability of the grammar

If the object can stay in the PP in a nominal passive, as in (9d), why can't the Agent appear in the Spec position of the nominal, as in (8e)? Why is the Possessor position not free?

We argue that the answer is to maintain a complete parallel between the verbal and nominal passive (see Hirawa (2005) on CP-DP correspondence). We achieve this by postulating covert movement of the object to the Spec position for the PP case in (9d), in effect then blocking this position for any other phrase, and making the nominal and verbal passives transformationally identical. (We discuss technical consequences for Case theory below.) In (10) we have notated this covert movement by marking the subsequent Spec positions as [+Theme]:

(7) a. [ Theme ]<sub>i</sub>'s learnability t<sub>i</sub>



Note that not only is the Agent excluded from the upper Spec (= subject) position, but adverbs are excluded too. Here too *-ability* nominals differ from *-tion* nominals. Compare *destruction* versus *learnability* and *discoverability* in (11).

- (8) a. Last year's destruction of the city was a disaster.  
 b. The learnability of computer science last year was easier than this year.  
 c. \* Last year's learnability of computer science was easier than this year's.  
 d. The discoverability of new genes in the 19th century turned out to be a revolution.  
 e. \* The 19th century's discoverability of new genes turned out to be a revolution.  
 f. the 19<sup>th</sup> century's discovery of new genes turned out to be a revolution.

Whereas the Spec position in the *-tion* nominal is unrestricted - it may host an Agent, Theme or adverbial, the Spec position of an *-ability* nominal is only available for Themes.<sup>2</sup>

<sup>2</sup>See Roeper (1993) for further discussion.

Another consequence of assuming passive in the nominal is that we expect to find disjoint reference effects. And indeed we find them, (12).

- (9) a. The child was dressed.  
b. The child dressed.  
c. The dressability of the child

(12c) only has the transitive reading (someone dresses the child) and not the reflexive one (the child dresses). This disjoint reference effect of the passive in *-able* is evident preminally as well.

- (10) a. a loving couple  
b. a lovable couple  
c. the loveability of the couple  
d. the couple's loveability

While (13a) allows a reciprocal reading, the remaining cases all require that the Agent be disjoint from the couple. Why is the passive not neutral, but requires disjoint reference? It is possible to construct a neutral case with a truly adjectival passive, which has essentially lost its argument structure.<sup>3</sup>

- (11) John is shaven.

He may have done it himself, or the barber has shaved him. It seems as if you can only get a reflexive reading when the Agent c-commands the object, i.e., John shaves (himself). In a passive the object moves higher up and cannot be c-commanded. This then forces a non-reflexive reading and yields a disjoint reference effect, while in (15b) the PRO subject licenses the reflexive:<sup>4</sup>

- (12) a. \*The dressability of himself thrilled the little boy.  
b. The PRO dressing of himself thrilled the little boy.

In (15a) *himself* moves covertly and that is out for the same reason that you cannot have a reflexive as subject in a verbal active or passive:

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<sup>3</sup>Failure to see that the adjectival/verbal passive has consequences for disjoint reference has often led to confusion.

<sup>4</sup>First discussed for verbal passives in Postal (1971), see also Baker, Johnson, and Roberts (1989) and Roeper (1987).

- (13) a. \* Himself washed John.  
 b. \* Himself was washed by John..

### 3. What moves? Why Feature-movement fails

Our proposal of covert movement of the Theme argument leads to a current focus in linguistic theory: What needs to be moved? One goal of linguistic theory is to minimize structures and operations. Therefore we should seek to move as little as possible. The existence of pied-piping in grammar remains a problem, or an imperfection which has been linked to other modules like phonology (Chomsky (1995), (2001a)).

In principle, then, covert movement should move only what needs to be checked under a Feature-checking model. However, Chomsky (2001a) and Pesetsky (2000) among others, have argued that more than Feature-movement may be required. The “more” is usually referred to as category movement or phrasal movement. We can ask what is moved to the Spec position, (17)?

- (14) a. a Feature,  
 b. part of the object noun phrase (the noun plus determiner), but no adjuncts,  
 c. the full phrase (noun, determiner and adjunct).

Under a Feature-movement account, one could argue that only a Formal Feature Theme could move to the Spec position to give it the Theme requirement.<sup>5</sup> This could achieve the blocking effect we desire. Is there evidence that more than a thematic role must move?

A *prima facie* argument for covert phrasal movement of the full phrase object is that overt phrasal movement of the full phrase is required. Of course parallelism is not necessary, but natural under an Occam's razor perspective. We note that while verbal passives allow extraposition of a PP adjunct belonging to the subject, nominal passives do not. They require a full DP and not just the head without the adjoined PP as we can find in verbal passives.

- (15) a. The grammar of Dutch was learned.  
 b. The grammar was learned of Dutch.  
 c. \* the grammar's learnability of Dutch  
 d. the grammar of Dutch's learnability

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<sup>5</sup>See Hornstein (1999) for an argument that Agent should be treated as a Feature in implicit Agent constructions.



We find that (19c) is not allowed. Therefore if covert movement is minimally different from overt movement, then we should assume Pied-piping of the full phrase. However, it would be ideal to show that there is a meaning difference in covert movement which requires movement of the whole phrase.

### 3.1 Quantifier movement: Wide scope inside the nominalization

Pesetsky (2000) has argued from cases of Antecedent Contained Deletion that we must have covert Phrasal Movement, by showing interpretive differences that cannot be predicted by moving only a Feature. In that spirit, we can as well show a meaning difference at a subtle level that applies to the covertly moved object which is overtly in a postnominal PP. Consider the contrast between (19a,b). Kayne (2001) notes that (19b) does not retain the meaning of (19a).

- (16) a. The election of nobody surprised me.  
b. Nobody's election surprised me.<sup>6</sup>

In (19a) we get a group reading or a distributed reading, while in (19b) there is only a distributed reading. That is, with the postnominal object PP in (19a) we can have an empty set (no person got elected and that fact surprised me), while with the object in the Spec position in (19b) we have a full set of elected people, each of whose election did not surprise me, which is the same as the distributed reading of (19a). Similar ambiguities arise elsewhere, as in (20).

- (17) a. A picture of everyone is here.  
b. Everyone's picture is here.

In (20a) there is a group reading (or a distributed reading), while in (20b) we have a distributed reading only. In other words, a specific wide-scope reading arises with pre-posing.

This fact merits emphasis in itself. If we assume that LF movement is uniformly to the beginning of the clause, then it suggests that LF differences exist at the DP level, supporting the view that the DP is clausal in nature. This in turn supports the view that it should be regarded as a Phase in terms of Chomsky (2000, 2001a,b). We call this phenomenon local LF. We argue below that it can be assimilated to the notion of edge phenomena (leaving its possibly substantial further implications unaddressed here.)

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<sup>6</sup> A context makes the contrast clearer:

- (i) Many people were surprised that a black and an Hispanic were elected in largely white neighborhoods. But actually, nobody's election surprised me.

Now we are in a position to construe an important test. What happens to the local LF effect in *-ability* nominalizations? We predict:

if covert movement is obligatory, then only the wide-scope reading should be available.

This is just what we find when we look closely:

- (18) a. The believing of every witness was a surprise.  
b. The believeability of every witness was a surprise.  
c. Every witness's believeability was a surprise.

In (21a) we have the narrow-scope reading where it was a surprise that the set of witnesses was believed, while in (21b) we have a wide-scope reading where it is the believeability of each witness that is a surprise. It is precisely the same reading we find for (21c). Consider also (22).

- (19) a. the election of nobody surprised me.  
b. The electability of nobody surprised me.

As for the set of electable people, none of them were surprising. The other meaning is excluded: that there is a possibility that nobody was electable. In other words, we are projecting a wide-scope reading for the quantifier *nobody* even when it is in a postnominal PP. Such a wide scope reading is exactly what we predict under covert phrasal movement: more than a thematic role, in fact the whole phrase, now including scope features, moves. Again, overt preposing has exactly the same reading.

- (20) Nobody's electability surprised me.

Once again, we find that without the passivizing *-able* expression, we allow the narrow scope reading for *-tion* (above) and for *-ing*, where the narrow scope reading appears to be required or strongly preferred, (24), which has the reading that: nobody was elected.

- (21) The electing of nobody surprised me.

However, the negative quantifier *nobody* is known to confuse some of these judgements, so it is wise to avoid it. Therefore we add some other cases.

- (22) a. The selection of just one girl came as a surprise.  
b. The selectability of just one girl came as a surprise.  
c. Just one girl's selectability came as a surprise.

Again, we find a preference for individual surprise in (26b), but the narrow reading is possible.

These preferences, though subtle, are amenable to a precise technical representation if we take another look at verbal passives. The wide/narrow scope contrast arises in just these contexts, as has been observed for a long time.

- (23) a. Everyone speaks two languages.  
 b. Two languages are spoken by everyone.  
 c. Two languages must be spoken by every applicant for foreign language teacher.

(26b) favors wide scope. But the narrow scope reading remains possible, particularly if a favorable context is chosen as in (26c). Here we can pull out the other reading: two languages, but an unspecified two languages, must be spoken.

However our claim in this paper is that the *-able* affix creates a preference for wide-scope reading that resembles the sentential passive preference., but in fact is stronger and no longer has an ambiguity.

Some speakers, very marginally, allow the narrow scope reading of (25b) as well. How can this arise? We feel that a further operation of reconstruction occurs which then allows the faint presence of this interpretation. The same, strongly felt interpretation is available for (25c) because it mirrors the surface and requires no further operation. This is illustrated in schematic terms in (27).

(24) for (25b): *the selectability of just one girl*

move covertly:  $\leftarrow \text{=====} [\text{just one girl}]$   
 =  $[\text{just one girl}=\text{s}]$  selectability

reconstruct:  $[\text{just one girl's}] \text{=====} \rightarrow$   
 = the selectability of (just one girl)  
 => narrow scope interpretation of object

for (25a): *the selection of just one girl*

direct interpretation: = elect  $[\text{just one girl}]$   
 => narrow scope interpretation of object

While the *-tion* case (25a) allows passive, it does not require passive because no obligatory passive *-able* morphology is present. Thus, at a very subtle, but discernible level we see the presence of covert movement and a distinction with reconstruction.

### 3.2 Adjectival Choice: Willing Participantes

If our claim of covert movement is correct, then it should have indirect consequences as well. Indirect consequences are generally the most persuasive form of linguistic evidence because they presuppose the claim being made. Tom Ernst (pc) has pointed out to us that adjectives select subjects. Thus the willing participants change, depending on what is in the subject position:

- 28) a. the patient's willing examination by the doctor
- b. the doctor's willing examination of the patient

However, ambiguity arises when both nouns are post-positional

- c. the willing examination of the patient by the doctor  
          (patient or doctor is willing)

Now we are in a position to test our hypothesis that covert movement exists, because it should force the object reading:

- d.? the willing examinability of the patient by the doctor

While the sentence itself seems questionable, the patient seems to be the one who is willing, not the doctor. We explored this claim with a small experiment (which could be expanded) by asking 16 undergraduates to finish one of four sentences (four students each):

- 29) The insurance company policy made everyone nervous,
  - a) The doctor's willing examination of the patient has a surprise.  
      He did it because.....
  - b) the patient's willing examination by the doctor came as a surprise.  
      He did it because.....
  - c) the willing examination of the patient by the doctor came as a surprise.

He did it because..  
 d) the willing examinability of the patient by the doctor  
 came as a surprise.  
 He did it because....

The sentence completion always revealed who the subject of willing was:  
 "...he knew he was really sick/he felt a doctor's obligation". The answers fell  
 exactly into line (with one exception) with our prediction:

30) a=> a) doctor/patient  
           0      4  
       b) doctor/ patient,  
           4      0  
       c) patient/doctor  
           2      2  
       d) doctor/ patient  
           1      3

(29,30a,b) chose the overt subject, the ambiguous (29,30c) got an even split, and  
 the covert movement (29,30d) was 3/1 in favor of the prediction under the  
 assumption the object moves covertly. Thus we find that the indirect evidence  
 supports our account.

### 3.3 Further Covert Movement in Nominalizations

If covert movement occurs with these objects, then it should occur in  
 classic covert movement environments as well: there-insertion. It has long  
 been argued that

31) a. there are three boys

involves covert movement of the object to subject in order to justify subject-  
 verb agreement. We predict that the same movement occurs in nominalizations  
 but with the consequence that there does not appear because there is no case  
 requirement to satisfy.

32) a. the appearance of John/John's appearance  
       b.\*there's appearance of John

Since (a) the covert movement occurs and there is no justification for there-

insertion and it cannot occur. The occurrence of *there* in the sentential syntax is, as claimed, reduced to the need for case-assignment.

The following subtle contrast bolsters our account:

- 33) a. \*there's appearing of a problem
- b. ?there's appearing to be a problem
- c. a problem's appearance came as a surprise

We can explain the unacceptability of (33a) because covert-movement makes it unnecessary, while (33b) involves the raising of the lower there (it is now just like the NP a problem in a problem's appearance) if it is derived from (26):

- 34) ? the appearing of there to be a problem

(34) requires raising the lower expletive to the upper position, which is what happens overtly in (33b). Therefore it is grammatical because it is a moved-expletive not an expletive inserted to capture case. Our analysis receives just the sort of additional support that one would predict. 7

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7 The higher tree connection of *-ing* nominalizations allows a much wider range of argument projections. In fact, in that environment, we find that there-insertion is necessary again, when a VP is present,

- a. there's being a problem surprised everyone

Since it is ungrammatical without it:

- b. \*the being a problem surprised everyone.
- c. \*the being of a problem surprised everyone

With the nominalizing *-ing*, there is still impossible

- d. \*there's being of a problem surprised everyone  
    [like: \*there's appearing of a problem]

Since there is covert movement to the subject position. Now we might ask why we cannot have:

- e. \*a problem's being was not discussed

Here there seems to be a requirement of a subcategorized predicate:

- f. a problem's being in this report was not discussed.

Unlike appear we cannot have the non-there sentence either:

- g. \*the being of a problem.

This stands in contrast to:

- h. the appearing of a problem

The difference is traceable once again to the covert operation of object-preposing, which applies only in the (64) case, where *a problem* can move to the subject position because of the unaccusative properties of *appear*. Without object-pre-posing the nominalization fails to have a required expletive subject. The implication is that the expletive in (62) plays a slightly different role in *there appeared a problem* and *there is a problem* which is reflected in

#### 4. Phrasal movement

What exactly gets moved? Whatever is moved, it appears to involve more than just a Feature for a thematic role. In fact it is not clear what it would mean to move only the thematic role Theme. It would have the desired function of blocking an Agent in the Spec position.<sup>8</sup> However, if it were just a Theme, then it would presumably not have whatever greater structure is entailed by a quantifier. Feature-movement of Theme makes no predictions about the interpretation of a quantificational object. What then could carry that information? One could assume a pure quantifier node (QP, as in Beck (1996)) or a traditional assumption that definite reference (wide scope) requires a DP to carry the Specificity property. In any case, there must be movement of at least the DP and more than just a thematic Feature to entail this meaning.

To summarize at this point, the interface between modules often puts both principles and problems into sharp relief. It is perhaps useful to assemble now the challenging characteristics about morphological passive.

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the fact that we can say *a problem appeared* but not *\*a problem was*. The verb be requires the subcategorization of a predicate position which is accomplished through there-insertion. This is a syntactic constraint on a predicate position, since no shift in meaning is entailed.

<sup>8</sup>Note that while thematic roles must eventually attach to a nominal, the nominal could be just the bare N. The Theme role is in fact absorbed by the incorporated N in a compound like:

(i) truck-driving

such that one cannot say:

(ii) \*truck-driving of Fords

although the meaning is plausible because it would involve two uses of the Theme argument.

- (35) a. Subject position: the EPP position is not within any obvious next Phase, but rather at the edge of a higher DP.  
 b. Case- absorption: *-ability* passives allow *of*-PP's and therefore no absorption occurs.  
 c. Scope: wide-scope for *electability of nobody* is obligatory for the complement.

These properties intuitively call for greater abstraction if they are to be captured within the spirit of current principles. Chomsky (2001b) goes in precisely this direction.

#### 4.1 Greater abstraction: Edge, long-distance Agree, cycle within morphology

Chomsky proposes that a modernized notion of the Cycle applies more locally.

- (36) Phase = [ $\alpha$  [H  $\beta$ ]],  $\alpha$ -H = Edge of HP

Chomsky provides arguments that movement operations, semantic interpretation, and phonology occur at the Phase level, via an operation of TRANSFER, which "hands over" information after syntactic rules apply to these additional components of grammar. Thus, all components of grammar apply in each cycle, but no further ones, following the Phase Impenetrability Constraint. One traditional, but now more abstract, exception exists for the "Edge" (in the tradition of the CP escape hatch). A Phase thus is a hypothesis that the old notions of clause and movement to Spec-CP are insufficient. There is a tradition of suggestions that nominalizations are clause-like. The notion of Phase is an explicit elaboration which can now subsume the clause, the DP and the VP, at least. Then Chomsky proposes the following.

- (37) a. The domain of H is not accessible to operations, but only the Edge of HP.  
 b. Phases include vP and VP and might include DP.

The Burzio constraint we found inside the DP may be the most concrete illustration of the legitimacy of these more abstract concepts. Our evidence suggests precisely that movement is to the Edge of DP, which then must be a Phase. Evidence of this kind supports the notion that the abstract notion of Edge, rather than just Spec-CP, is needed. It is a natural prediction that Phases should also form an LF domain and therefore DP should be an LF domain.



What follows are exploratory remarks on how we may adapt certain of these concepts, in particular these notions of Phase, Edge and covert movement of a phrasal argument, and we add wide-scope within DP. We can restate the above as follows.

- (38) a. DP operates as a Phase,  
b. Movement goes to the Edge of DP,  
c. Covert movement for objects of morphological passive is obligatory, and  
d. Movement to satisfy both thematic and quantifier scope requirements can occur.

We use these concepts for constructions that are quite different from those utilized by Chomsky, but which are predictable under the view that abstract principles should unite disparate facts. If they apply, then they appear to be a significant factor to buttress the level of abstraction chosen.

Chomsky comments specifically on direct objects within the verbal system, noting their ineligibility for covert movement.

Covert movement to the escape hatch Spec-vP is possible for a direct object only if it undergoes further A' bar movement (in the informal sense). Thus there is covert wh-movement but not covert object shift OS (yielding the semantic edge properties but without overt movement). If OS is case-driven, and Move includes Agree, then we cannot have the sequence of operations: Agree (v, object), Transfer, OS. But wh-movement is plainly driven by a different feature, as successive-cyclic and adjunct movement make clear. Therefore it can apply (covertly) in a unitary fashion after Transfer.@

(Chomsky 2001b:12)

This analysis in fact makes a prediction: if case is assigned in a different way, and if long-distance movement is involved, then the theory makes the following prediction.

- (39) It should be possible to move an object covertly.

The morphological passive appears to be a candidate to fill this predicted niche. First we have seen that under the definition that Spec-DP is the Edge of a Phrase, it is an appropriate landing site. If we assume that Spec-vP and Spec-*ity* are each Phases, then the cyclic movement operation becomes in effect a long-distance@ operation.

And, once again, if the quantificational properties of *nobody* carry extra structure, covert movement is in effect phrasal, as Pesetsky (2000) argues. Now we must make a further assumption that correlates with the fact that *-ability* nominals take a PP (*the learnability of a grammar*).

(40) Case-assignment in a PP is different from VP case-assignment.

The presence of a PP object marked by a preposition, not by the verb itself, then stands out as a hook on which one can explain why covert object movement is possible in the nominalization, but not elsewhere. We will not explore the matter further, but simply say that under these assumptions we have an instance of (39), “covert movement for a direct object is possible”.<sup>9</sup>

In support of this approach to passive, Frampton and Guttman (2000) argue specifically that passive should be defined not by case-theoretic constraints, but simply by the Chain Condition in (41), which allows the pronunciation of an element in a chain at only one position (a TE head is Temporal/Event head).

(41) A chain is the set of heads sharing a particular feature. Interpretable nominal chains contain at most one TE-head@  
(Frampton and Guttman 2000)

This then leads to the correct assumption that one cannot have (42a) where *nobody* and *him* are coreferent, with *him* as a resumptive pronoun, just like resumptive pronouns are ruled out in a passive, (42b).

(42) a. \* nobody's<sub>i</sub> electability of him<sub>i</sub>  
b. \* The ball<sub>i</sub> was hit it<sub>i</sub>.

The Chain Condition suits the morphological passive more appropriately than the verbal passive. The Frampton and Guttman approach to the passive under the Chain Condition creates the possibility to include the morphological passive as one instance of a more abstract passive.

Let us then assume precisely that *-able* operates on the argument structure of the verb that it attaches to in the following way.

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<sup>9</sup>Suppose one argued that the PP makes the object into a kind of adjunct, and adjunct movement was involved? Still, it would be covert adjunct movement. This seems like a possible technical option, but an inferior conceptual option. It would undo the connection to the passive through the *-able* affix which predicts many other facts (*\*children are singable*).

- (43) *-able*: Project Theme DP argument;  
           Move Theme DP to Edge of *-able*.  
*-ity*: Select Theme Projection and Agree features;  
           Move Theme to Edge of *-ity*.

It then waits for Internal Merge to add both *-ity* and DP and then links its Theme object Features by long-distance Agree cyclically to those positions. This is obviously a rough formulation of ideas which themselves can be specified more exactly. However, we think they will serve to provide a basic design of the passive and how morphological passives contribute to an articulation of Minimalist theory.

Our structures have abstracted away from many questions about the presence or absence of TP and Aspectual information inside of nominalizations. (See Alexiadou (1999), Borer (2004), among others). We will not explore these factors, which may complicate the technical account, beyond the observation that they must be compatible with the movement operations we have demonstrated.

## 5. Nominalization Typology

Our theory depends upon a claim that extends to all affixation: affixes determine argument structure. (See also: Alexiadou (1999), Borer (2000), Roeper (2000), Harley (1999) Harley and Noyer (2003), Roeper (2004)). Once we adopt this view other facts fall into place. A classic question (Kayne (1983)) has been why it is not possible to pre-pose in *-ing* nominalizations:

- 44) a. the destroying of the city  
       b. \* the city's destroying

It seemed like a strange anomaly. However, we can now argue that there is no passivizing affix that would motivate movement to the subject position. If true we should find other cases. In fact bare nominals allow only subject readings:

- 45) my love, my help, my advice, my push

and *-th* famously disallows a transitive reading:

- 46) the growth of tomatoes

and many affixes allow no argument structure at all:

#### 47) \*imaginary of a problem

Although the lexicon is the home of exceptions, there are remarkably few exceptions to these observations. We leave a more thorough discussion of nominalization affixes to future research, but the conclusion is clear: preposing in all derived forms requires exactly the same kind of licensing that one finds in verbal syntax.

### 5. Conclusion

In sum, we have shown that an economical account of nominalizations leads to the projection of covert movement of the object to the Specifier of the nominal for *-ability* nominalizations that parallels Burzio's generalization about verbal passives. Our exploration of what moves in covert movement has led us to assert that Feature-movement is inadequate. More structure must be covertly moved to capture the behavior of quantifiers. This could correspond to movement of just the head noun of the object, or the whole noun phrase. We found, further, that some evidence for phrasal movement was available under the assumption of parallelism between overt and covert movement since phrasal movement is required in the nominalization (*\*the grammar's learnability of Dutch*), whereas it is not required in the verbal form (*the grammar was learned of Dutch*). These facts are parsimoniously captured under the assumption of covert phrasal movement.

In Lees (1960) derivational morphology in the realm of nominalizations was first considered a part of syntax. Roeper and Siegel (1978) extended this view to compounds. Recent work in derivational morphology (Halle and Marantz (1992), Marantz (1997), Harley (1999)), and most recently Fu, Roeper, and Borer (2001) has broadened the scope of this enterprise. This essay suggests that a further array of subtle empirical findings is predicted that involve LF. And, moreover, it calls for a higher level of abstraction than required by verbal syntax alone, which in turn justifies the more abstract character of Edge and Phase. Overall, we have championed the parallelism of DP and CP and a fully parallel theory of semantic and syntactic effects within Phases. Our account of how *-ability* licenses argument projection in DP provides a basis for argument projection with all derivational affixes.

Once again we have seen that “lexical” operations belong in the heart of syntax.

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