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**Dual Lexical Categories Vs. Phrasal Conversion
in the Analysis of Gerund Phrases**

Steven G. Lapointe*

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Abstract

Two rather different approaches have recently been proposed for handling the phrasal category mismatches exhibited by gerund phrases. The Dual Lexical Category account assumes that the external and internal properties of phrases can be specified separately, so that in the case of gerunds the external properties are those of NPs while the internal properties are those of VPs. Such property mismatches are licensed only when a special type of lexical item, one belonging to a particular type of dual lexical category, heads the phrase. In contrast, the Phrasal Conversion analysis assumes that nominalized phrases are created by affixing a nominalizing marker to a VP in the syntax, with the marker being realized on the head V of the phrase. This approach identifies two types of phrasal nominalization — one involving an overt marker, the other a zero-morph — parallel to the overt vs. zero-morph conversion processes which take place at the lexical level. The present paper will show that challenges to the Dual Lexical Category account posed by the Phrasal Conversion analysis can be met in a straightforward way, that there are in fact problems which the Phrasal Conversion approach itself faces, and that as a result of these difficulties the Dual Lexical Category approach is to be preferred over the alternative.

Introduction

In a series of recent articles (Lapointe 1993a, 1993b, to appear; Lapointe and Nielsen 1996), a theory of mixed category phrases, of which gerund phrases form a particular subclass, has been developed which claims that such phrases are headed by a type of lexical item dubbed a DUAL LEXICAL CATEGORY (DLC). This is a lexical category of the

* (By Peter Sells, Stanford University.) Tragically, Steven Lapointe died in February 1999. He had planned to submit this paper to this volume before he became ill, but withdrew it when the seriousness of his illness became known. Subsequently, we decided to resubmit the paper with some minor corrections and revisions. I am grateful to Jerry Sadock, James Yoon, Cathryn Donohue, Yukiko Morimoto and Cindy Goldberg for their assistance in this process. A website dedicated to Steven's linguistic work has been established at <http://lapointe.ucdavis.edu>. It has been my sad privilege to work on this paper on behalf of my friend. Here is the original acknowledgement:

I wish to thank the following people for discussions of earlier versions of this paper: James Yoon, Peter Sells, Yukiko Morimoto, Andy Spencer, Jeff Runner, Greg Carlson, Paul Kiparsky, Ida Toivonen, and Jerry Sadock. I also wish to thank participants of the Departmental Colloquia at the Universities of Manchester, Essex, and Rochester for their helpful comments. All remaining errors are solely my own.

form $\langle XIY \rangle^0$ (read: "X stroke Y zero"), where the first part of the category ($\langle XI \rangle$) determines the external properties of the phrase of which it is a head, and the second part ($\langle Y \rangle$) determines the internal properties. In terms of higher syntactic structure, the first part of a dual category licenses a phrasal category XP, the second part licenses a YP, and the general properties of the account dictate that the XP and YP stand in a mother/head daughter relation. In the case of gerund phrases, then, the gerund itself belongs to category $\langle NIV \rangle^0$, and so the whole gerund phrase has an NP-over-VP structure, from which the well-known syntactic property mismatches of these phrases in English and a number of other languages follow.

In contrast to this type of analysis, James Yoon has proposed in two recent papers (Yoon 1996a, 1996b) a PHRASAL CONVERSION (PhrCon) account of gerund phrases. The basic idea behind this approach is that nominalized phrases are created by affixing a nominalizing marker to a VP in the syntax, with the marker being realized on the head V of that phrase, while derived lexical Ns are created by affixing (usually the same) marker to a lexical V. Yoon identifies two types of nominalizing elements across languages, one of which serves only the function of nominalizing the category to which it is attached, while the other is used (i) in some contexts as a nonfinite verb marker and (ii) in others apparently as a nominalizer. On the PhrCon account the first kind of element is taken to be a real nominalizer, applying either in the syntax to produce nominalized phrases or in the morphology to derive lexically deverbal Ns. In contrast, the second type of affix is assumed not really to be a nominalizer at all; it simply produces an inflected form of a V, the first of the two functions noted above for these elements. Instead, a zero-morph performs the actual function of nominalizing the constituent in question. The zero-morph nominalizer requires the phrase or word to which it attaches to contain a head inflected for the second type of affix, which is why the latter appears to be the nominalizer in these constructions. Yoon shows that the two main nominalizing affixes in Korean belong to the first type, while the gerund ending in English and the infinitive ending in Spanish fall into the second group.

As part of his analysis, Yoon offers a number of objections and challenges to the DLC approach. In the present paper, I will show that all of these challenges can be met in a straightforward manner within the DLC approach. Furthermore, I will show that there are unresolved problems with the PhrCon account itself. Hence, I will conclude that, contrary to Yoon's claims, the DLC analysis would appear to be the more adequate of these two alternatives for handling the complex facts exhibited by gerund phrases.

The paper will proceed as follows. In section 1 I will briefly summarize the DLC account of gerund phrases, and in section 2 I will summarize the PhrCon approach. In sections 3 and 4 I will present Yoon's empirical challenges and theoretical objections to the DLC analysis, along with the responses to them. In section 5 I will enumerate the various problems that arise on the PhrCon account. I will conclude in section 6 with some general comments on the analysis of mixed category phrases.

1. The Dual Lexical Category Account

Pullum (1991) offers a thorough analysis of the facts concerning gerund phrases in English, like those in (1), and provides an account of those facts in terms of standard GPSG (Gazdar, Klein, Pullum, and Sag 1985).

- (1) a. (Sue's) buying an expensive present
 b. (Bill's) having eaten a large apple
 c. (Jane's) not watching the game

There are, however, several significant problems with that analysis (see in particular Lapointe 1993b, to appear). Consequently, the DLC account was developed to overcome those problems while maintaining the basic aspects of the analysis of the English gerund phrase data.

The DLC analysis is based on the following assumptions. A natural way to account for the categorial mismatches exhibited by mixed category phrases is to take seriously the

notion that a given phrase type has both external and internal syntactic properties. Normally, the external and internal properties of a given type coincide, yielding standard types of phrases. However, they need not coincide, and when they do not, a mixed category phrase results. Since we do not want the external and internal properties of phrases to come unglued randomly in syntactic structures, it seems reasonable to assume that mixed category phrases arise only when they are headed by a special kind of lexical item, one which explicitly allows the external/internal property mismatch to occur. This is where the notion of a DLC enters the picture. I assume that DLCs are defined universally, both in syntax and in morphology,¹ and that as we will see shortly, the DLC format can be used to subsume standard lexical categories as well as those which head mixed category phrases. The definition of a DLC is given in (2).

- (2) Definition. A *dual lexical category (DLC)* is a category of type $\langle XIY \rangle^0$, where
- a. X, Y are major lexical categories,
 - b. X determines the external syntactic properties of the phrase of which the item is lexical head, and
 - c. Y determines the internal syntactic properties of that phrase.

Under the definition in (2) it is natural to distinguish two kinds of DLCs: *symmetrical DLCs*, in which $X = Y$, and *asymmetrical DLCs* in which $X \neq Y$. It is then possible to prove the following proposition concerning the relation of DLCs to standard lexical categories (a proof is given in the Appendix to Lapointe 1993b).

- (3) Proposition. A phrase containing the symmetrical DLC $\langle XIX \rangle^0$ as lexical head is equivalent to a phrase containing the standard category X^0 as lexical head.

The theory of DLCs thus subsumes that of regular lexical categories in a completely straightforward way: symmetrical DLCs are equivalent to standard lexical categories and lexically head endocentric X' phrases in exactly the ways syntacticians have generally assumed.

As for asymmetrical DLCs, it is this type that is involved in the analysis of mixed category phrases. The main claim of the DLC approach to mixed category phrases is that such phrases, and only those phrases, are lexically headed by asymmetrical DLCs. Hence, a mixed category phrase only occurs when it is anchored by a lexical head of the appropriate $\langle XIY \rangle^0$ category. In this way, the DLC approach takes immediate steps toward constraining when an XP-over-YP structure can occur. This claim, taken together with the definition in (2), leads to the following consequences about the general syntactic properties of mixed category phrases.

- (4) *General syntactic consequences of the DLC approach to mixed category phrases* —
- a. The internal structure of a mixed category phrase is that of YP, and so the phrase structure of the category must go at least up to that bar-level in order to include all of the internal properties of YPs.
 - b. The category change-over point occurs just above YP, which has an X-type category as its mother node.
 - c. That X-type category must be XP, and not X' or X^0 , since the whole phrase has the external properties of XP, and none of the internal properties of X' or X^0 .²

If we now turn to the particular case of English gerund phrases (GPs), since we want the external properties to be those of category N and the internal properties to be those

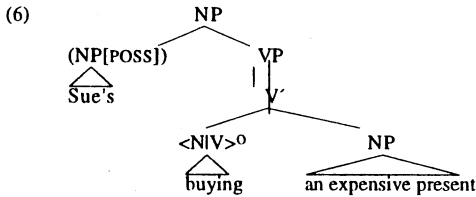
¹ Some of the morphological consequences of DLCs in gerund phrases are discussed in Lapointe 1993a.

² As noted at several points below, the restriction to major lexical categories and the restriction that the change-over point always involves maximal-level phrase nodes need to be weakened in various ways.

of category V, all we need to do is to assume that the gerund itself is a lexical item of DLC $\langle \text{NIV} \rangle^0$, created by the morphological rule attaching *-ing* to the base V.³ Given the general theory of DLCs just sketched, the specific consequences in the case of English GPs are those in (5).

- (5) *Specific syntactic consequences for English GPs —*
 a. The internal structure of English GPs is that of VPs.
 b. The change-over point occurs at the maximal VP node of the internal phrase.
 c. The VP is immediately dominated by a NP, and so the external structure of these GPs is that of NPs.

The PS rules of English will then include one which says $\text{NP} \rightarrow (\text{NP}[\text{POSS}]) \text{VP}$; this rule, together with the consequences in (5) mean that a GP like (1a) will have the structure in (6).



The top part of this tree has just the kind of NP-over-VP structure which Pullum (1991) has shown is required in order to accommodate the facts about English GPs, while the whole structure is lexically anchored in the appropriate type of DLC, $\langle \text{NIV} \rangle^0$, and only this type of DLC will license the needed NP-over-VP structure.

As Lapointe (1993b) shows, this analysis accounts for the following ten fundamental properties of GPs in English which Pullum enumerates.

(A) *Evidence that gerund phrases have the external structure of NPs*

(A.1) GPs can appear in essentially any clause-internal NP position.

(A.2) Like regular NPs but unlike full clauses, GPs can be objects of Preps.

These properties of GPs are illustrated below, where we find GPs in the standard NP positions allowed in English (7), and where we see that finite and nonfinite clauses are disallowed as objects of Preps (8).

- (7) a. Subject position — [Sue's buying an expensive present] surprised us.
 b. Direct object position — Betty couldn't comprehend [Sue's buying an expensive present].
 c. Object of Prep — Uncle Joe had to deal with [Sue's buying an expensive present].
- (8) a. * Uncle Joe had to deal with [that Sue had bought an expensive present].
 b. * Uncle Joe had to deal with [(for) Sue to buy an expensive present].

(B) *Evidence that GPs have some of the internal properties of NPs*

(B.1) The possessive marker that is used to indicate the subject NP in a GP is the same as the possessive marker used in regular NPs, namely, 's, as shown in (1) and (7) above. In contrast, a subject NP cannot be marked by any prepositional item, as shown in (9).

³ Or, alternatively, by zero-derivation from the PRES.PART form of the V. Nothing in the following discussion crucially hinges on the choice between these alternatives.

- (9) a. * By Sue/For Sue/To Sue/Sue's bought an expensive present.
 b. * By Bill/For Bill/To Bill/Bill's played the part of Scrooge.
 c. * By Santa/For Santa/To Santa/Santa's did not leave presents for the naughty children.

(B.2) The possessive NP in a GP is optional (cf. (1) again), just as in regular NPs, whereas the subject NP in a tensed clause is obligatory (10).

- (10) a. * ___ bought an expensive present.
 b. * ___ played the part of Scrooge.
 c. * ___ did not leave presents for the naughty children.

(C) Evidence that GPs have the internal structure of VPs

(C.1) GPs whose lexical heads are derived from transitive V bases occur with bare direct object NPs, as shown by many of the above examples. More generally, the internal arguments of GPs are morphologically marked in exactly the same way as in the corresponding regular VP.

(C.2) All nontensed auxiliaries, and no tensed auxiliaries or main verb forms, are permitted inside GPs in English, as illustrated in (11).

- (11) a. (Sue's) having bought the present
 b. (the present's) being bought in time
 c. (the present's) having been bought in time

(C.3) VP-level adverbial modifiers appear inside GPs, as shown in (12).

- (12) a. Sue's extravagantly buying an expensive present
 b. Bill's having noisily eaten the large apple
 c. Jane's obstinately not watching the game

(C.4) Adjective modifiers are not permitted inside GPs (13):

- (13) a. *Sue's extravagant buying an expensive present
 b. *Bill's having noisy eaten the large apple
 c. *Jane's obstinate not watching the game

(C.5) Relative clause modifiers are not permitted inside GPs as modifiers of those phrases, as indicated by the ungrammaticality of the phrases in (14). Notice that the intended ungrammatical reading in these phrase is the one in which the relative clause is modifying the content of the whole GP, and not just the final NP in the GP, as indicated by the bracketing.

- (14) a. * [Sue's buying an expensive present] that drove Aunt Mary crazy
 b. * [Bill's playing the part of Scrooge] that gave the critic indigestion
 c. * [Santa's leaving extra presents] that made the children ecstatic

(C.6) The negative particle *not* can appear before the gerund (1c), (12c), but it cannot appear before an N' in a regular NP (15).

- (15) a. * Sue's not presents
 b. * that not reindeer with the shiny nose

Hence, the DLC approach allows us to derive exactly the kind of structure that Pullum has argued we need on empirical grounds, while using a theory which provides a constrained approach to determining when a mixed category phrase in general can occur.⁴

⁴ It is interesting to ask what further restrictions there might be on asymmetrical DLCs. Since XP-over-

It is important to note that the DLC analysis is intended to handle not only gerund phrases in English but other types of mixed category phrases as well. Lapointe (1993b) outlines how this approach can be used to account for the properties of participle phrases in English (Jackendoff 1977) by assuming that they are headed by <AIV> items, while facts about bare-NP adverbials in English (Larson 1985) can be accommodated by assuming that they are headed by <PIN> items. Of greater concern in the present context, Lapointe and Nielsen 1996 and Lapointe (to appear) demonstrate that nominalized phrases in a number of other languages — including *-mE* phrases in Turkish, and *ku-* phrases in Chichewa — exhibit the classic external-internal mismatch behavior of GPs and so admit of an analysis in which such phrases are headed by <NIV>⁰ items.

2. The Phrasal Conversion Account

In contrast to the DLC approach, Yoon (1996a,b) adopts a Phrasal Conversion account. Following earlier work on syntactic affixation (Anderson 1992; Yoon 1989), this account assumes that affixes can attach to phrases in the syntax as well as to constituents in the morphology, and that when this occurs, the affix is realized morphologically on the head of the phrase. Hence, on this approach, it is natural to assume that nominalized phrases are created by affixing a nominalizing marker to a verbal constituent in the syntax, with the marker being realized on the head V of the phrase, while derived lexical Ns are created by affixing a marker to a lexical V. On this view, then, GPs are considered to be just one type of nominalized phrase generated via syntactic affixation.

Yoon goes on to observe that there appear to be two types of nominalizing elements across languages. The first type, which I will refer to as a *dedicated nominalizer*, serves only the function of nominalizing the category to which it is attached, while the second type, which I will call a *double-duty nominalizer*, is used (i) in some contexts as a nonfinite verb marker and (ii) in others apparently as a nominalizer. Yoon goes on to argue that the two are to be distinguished in the following way. Dedicated nominalizers are taken to be real nominalizers, applying either in the syntax (to produce nominalized phrases) or in the

YP structures are less frequently encountered across the world's languages than regular endocentric phrases, it seems reasonable to suppose that the universal theory of lexical categories has as a consequence the following:

- (i) a. Symmetrical DLCs are the unmarked type.
- b. Asymmetrical DLCs are the marked type.

We thus expect most languages to exhibit just symmetrical DLCs, some languages to exhibit both symmetrical and asymmetrical DLCs, and no language to exhibit just asymmetrical DLCs, and this appears to be true.

A separate sort of constraint involves the question of whether it is possible to have asymmetrical DLCs which are underived items in the lexicon. In earlier work (Lapointe 1993a,b), I proposed that there was a constraint which had the following restriction as a consequence:

- (ii) Asymmetrical dual category marking arises only as the result of a morphological or lexical process.

The idea here was that asymmetrical DLCs have to be morphologically generated or belong to a fixed, nonregular lexical class. Under this constraint, then, the answer to the above question would be that generally speaking asymmetrical DLCs do not occur as underived lexical items. There are, however, several unresolved issues here. One has to do with the status of bare-NP adverbials, mentioned immediately below in the text. The case involving fixed lexical classes in (ii) was included to handle just such items. However, it is not clear whether they should be treated as underived items (as I previously assumed) or as derived from the corresponding Ns by morphological conversion. If the latter proved to be the correct analysis, then we could eliminate this second case and say simply that items belonging to asymmetrical DLCs have to be morphologically derived. But there is a second, broader issue here. If DLCs are *lexical* categories, what prevents them from including underived lexical items? That is, what is really behind the constraint that leads to (ii), and why does it apply only to asymmetrical DLCs? Simply stating that asymmetrical DLCs are marked, as in (i) above, is not sufficient. There are therefore a number of serious questions that remain to be addressed along these lines.

morphology (to derive lexically deverbal Ns). In contrast, the double-duty affixes are assumed not really to be nominalizers at all; they simply produce various inflected forms of Vs, fulfilling function (i) above for these elements. Instead, in these cases a zero-morph performs the actual function of nominalizing the constituent in question. The zero-morph nominalizer requires the phrase or word to which it attaches to contain a head inflected for the double-duty affix. According to the PhrCon analysis, then, this subcategorization requirement is the reason why the double-duty affix always occurs in these constructions, and hence why it appears to be doing double duty as a nominalizer in the first place.

Yoon shows that dedicated nominalizing affixes can be found in Korean Type III nominalizations (the ones which exhibit properties parallel to GPs in English), as in (16).⁵

- (16) (after Yoon 1996a (12))
 % John-uy pap-ul mek-um
 John-GEN rice-ACC eat-NML
 'John's eating the/a meal'

Yoon also observes that such dedicated nominalizers are found in Turkish and in Quechua. On the other hand, double-duty nominalizers are found in English and Spanish. In English, the *-ing* ending serves not only as the apparent nominalizer in GPs but also acts as the present participle ending in regular VPs in standard progressive tense finite clauses (17). In Spanish, the *-ar/er/ir* marker occurs not only on the head of nominalized phrases but also on the V head of infinitive VPs (18).

- (17) a. Sue's buying an expensive present
 b. Sue was buying an expensive present.

- (18) a. nuestro cantar-las
 'our singing them'
 b. Luisa quiere cantar-las
 'Luisa wants to sing them'

One of the important points in favor of the PhrCon approach to nominalizing affixes is that very often among the world's languages, the same nominalizer is used to create both derived lexical Ns and nominalized phrases, and this is true regardless of whether the nominalizer is a dedicated affix or a zero-morph in a double-duty affix construction. Thus, alongside the GPs in (16) - (18) above for Korean, English, and Spanish, we find lexical deverbal nominals in (19) - (21) involving the same affixes in these languages.

- (19) (after Yoon 1996a (8b))
 cwuk-um-ulo/i/uy
 die-NML-INST/NOM/GEN
 'through death/death(NOM)/death's'

- (20) no recording of the Marseillaise

- (21) (after Yoon 1996a (12b))
 tus cantar-es
 your sing.INF-PL
 'your songs'

Yoon is careful to observe that the claim is not that every language necessarily has a single form which is used both to create derived lexical Ns and to mark nominalized phrases. However, in light of the fact that many languages appear to exhibit this correlation — that the same form that is used to nominalize VPs is also used to nominalize

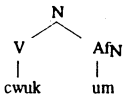
⁵ Type III nominalizations in Korean are acceptable only in restricted registers; see Lapointe and Nielsen 1995 for some discussion of this point.

lexical Vs — it is reasonable to conclude that it is not an accidental fact in those languages which exhibit it. Hence, it is a correlation that we need to capture in whatever account we provide for nominalized phrases. The analysis which Yoon provides for the two types of nominalizers attempts to do just that. He assumes that the Korean nominalizer *-um* converts a V-type constituent of any bar level into a N-type constituent of the same level, as shown in (22).

(22) Korean nominalizer: *-um* : [Vⁿ ___]_Nⁿ

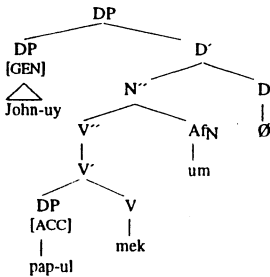
Thus, if *n* = 0, we are dealing with a case of lexical derivation, as in (23).

(23) Derived lexical N — *cwuk-um*



On the other hand, if *n* = 2 (which Yoon takes to be the maximal bar level for Korean), a full VP is being nominalized, as shown in (24).⁶

(24) Nominalized phrase — *John-uy pap-ul mek-um*



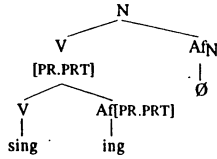
Cases involving double-duty affixes work in an exactly parallel fashion, except that the nominalizing affix is a zero-morph taking a specially marked verbal base form. Thus, in English, the *-ing* cases would involve a nominalizing affix with the properties in (25).

(25) English nominalizer: *-∅* : [V[PR.PRT]ⁿ ___]_Nⁿ

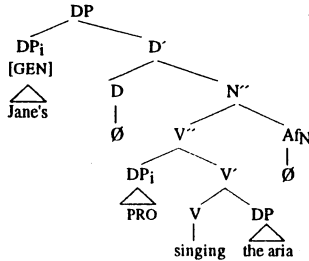
Again, if *n* = 0, we have a case of lexical deverbal nominalization (26), whereas if *n* = 2, the result of affixation is a GP with the structure in (27).

⁶ There is a third possibility here, namely, when *n* = 1. Yoon does not explicitly discuss this possibility, but it proves to be a problem for the PhrCon approach, as we will see in section 5 below.

(26) Derived lexical N — *singing*



(27). Nominalized phrase — *Jane's singing the aria*



Yoon adduces two main sets of facts which correlate with the distinction between dedicated vs. double-duty nominalizations and hence support the different treatment of them in the PhrCon approach. The first set of facts is that in languages with dedicated nominalizers, the resulting phrasal nominalization forms can bear affixes which typically attach to Ns in the language, whereas languages with double-duty nominalizers do not permit such affixes on those forms. In particular, in the first type of language, the full range of case markers attach to gerund forms, as seen in the following Korean forms.

(28) (after Yoon 1996a, (7b))

- a. [mek-hi-m]-ulo 'through being eaten'
[eat-PASS-GER]-INSTR
- b. [mek-hi-m]-i 'being eaten (NOM)'
[eat-PASS-GER]-NOM
- c. [mek-hi-m]-uy 'being eaten (GEN)'
[eat-PASS-GER]-GEN

In contrast, in the second type of language plural markers which otherwise attach to Ns cannot also attach to gerunds, as shown by English examples like (29), where strictly lexical nominalizations like (29a) can be pluralized, but the gerund in a GP like (29b) cannot.

(29) (after Yoon 1996a (9))

- a. (frequent) singing-s of the Marseillaise
- b. *John's singing-s the Marseillaise

The PhrCon account of this set of facts runs along the following lines. In Korean case suffixes are themselves phrasal affixes, taking NPs into NPs (while being morphologically attached to the head N of the original NP). Such markers should be just as capable of attaching to NPs created by phrasal affixation as they are to regular NPs. Indeed they can, yielding case-marked gerund forms like those in (28). In contrast, the plural marker in English is a lexical affix which only attaches to Ns. On the PhrCon

analysis, a GP includes an internal VP with a standard V as its lexical head. Hence, we should not expect that lexical head to be able to bear the plural suffix, since Vs in general do not bear such suffixes in English, and they do not (29b). On the other hand, in lexical nominalizations (29a) the resulting structure is that of a N. Here we do expect the plural marker to be attachable, and it is.

The second set of facts concerns the way in which gerunds behave in coordinate structures. Yoon (1996b, 80) observes that there is a contrast in the marking found on gerunds in English vs. Korean:

- (30) (after Yoon 1996b (30), (32a))
 a. John's [[sing-*ing* the song]_{VP} and [play-*ing* the piano]_{VP}-Ø]_{NP}
 b. *John's [[sing-*ing* the song]_{VP} and [play the piano]_{VP}-Ø]_{NP}
- (31) (after Yoon 1996b (31), (32b))
 a. John-uy [chayk-ul ilk-um]_{NP}-kwa [pap-ul mek-um]_{NP}
 John-GEN [book-ACC read-GER]-CONJ [rice-ACC eat-GER]
 John's reading the book and eating the meal'
 b. John-uy [[chayk-ul ilk]_{VP}-ko [pap-ul mek]_{VP}]_{NP}-um
 John-GEN [[book-ACC read]-CONJ [rice-ACC eat]]-GER
 = (33a)

The PhrCon account of such facts is again straightforward. In English examples like (30a), two present participle VPs are first coordinated, and the -Ø affix which derives NPs from such VPs in English (25) applies to the result. However, in (30b) the coordinate structure to which the -Ø affix has applied is itself ill-formed, since the first conjunct is a VP[PRES.PRT] while the second is a VP[INF], and in general it is not possible to conjoin phrases whose heads disagree in morphosyntactic features in this way.⁷ In Korean, on the other hand, the gerund affix simply attaches to VPs, without further restrictions. So, the affix can attach to each separate VP, creating two separate NPs which are then conjoined under an NP, as in (31a), or the two VPs can first be conjoined, with the resulting coordinate VP undergoing conversion to become an NP, as in (31b).⁸

3. Analytic Challenges to the DLC Approach

A number of the points raised in Yoon's discussion can be viewed as presenting challenges to, or arguments against, the DLC approach. These fall roughly into two categories: analytic difficulties and more general theoretical problems. I take up the former in this section and the latter in the following section.

3.1 Permitting CASE markers on gerunds. As we have seen, in languages like Korean, case markers typically attach quite freely to gerund forms. This is expected on the PhrCon analysis, since these markers attach in the syntax to NPs and are realized on whatever item is the lexical head of the phrase, regardless of the category to which that head belongs. In the cases in question, the head happens to be a V with a dedicated nominalizer suffixed to it, as in the Korean example (24). It is not clear, however, how such case markers would be able to attach to gerunds on the DLC account, since that analysis does not make appeal to a notion of phrasal affix. Furthermore, the gerund itself

⁷ An alternative analysis of (30b) in which the -Ø affix applies just to the VP in the first conjunct is just as ill-formed, since then, on the PhrCon analysis, we would be conjoining an NP in the first conjunct with a VP in the second.

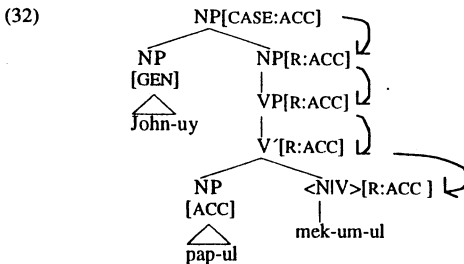
⁸ Yoon also observes a further fact, though one which is not directly relevant to the distinction between dedicated and double-duty nominalizers. In Spanish, infinitives in nominalizations can occur with object clitics, just as they can in regular nonfinite clauses, while lexical derived nominals based on infinitives cannot. I return to this set of facts shortly.

belongs to the category $\langle \text{NIV} \rangle^0$, and since case markers typically attach only to N^0 's, it is not obvious how we could arrange things so that case markers could appear on such forms. *Response*. There are two responses to this challenge that can be given, depending on whether the case markers in question are phrasal affixes or regular affixes.

First, while the DLC approach may not make direct appeal to a notion of phrasal affix in generating gerund forms, there is nothing in principle preventing phrasal affixes from being used in conjunction with a DLC account of GPs to handle various properties of such phrases in a given language. It happens to be the case that English GPs formed the initial empirical base in developing the DLC analysis. The *-ing* ending in such phrases is clearly a regular, lexical affix and not a phrasal one, a point on which both the PhrCon account and the DLC analysis agree, and given that the DLC account takes the *-ing* suffix to be the nominalizer here — that is, as really doing double duty in the language — there has been no reason, on the basis of English GPs, to be concerned with phrasal affixes in accounting for the basic facts about GPs up to this point.

Numerous works have been devoted to the analysis of phrasal or edge affixes, among them Anderson 1982, Zwicky 1987, Nevis 1985, Kanerva 1987, Yoon 1989, 1990, Miller 1991, Miller and Halpern 1992, and Lapointe 1990, 1992. These approaches differ somewhat among themselves; for example, some, like Yoon's, allow a phrasal affix to occur on the head of a phrase as well as on a phrase-marginal element, while others do not allow this. For concreteness, I will adopt Miller and Halpern's (1992) treatment in terms of EDGE features in GPSG. The basic idea is that an edge affix is controlled by the presence of an EDGE feature, which is itself determined by the presence of a semantically relevant feature occurring on a phrasal node. The semantically relevant feature can be thought of as "launching" the EDGE feature, which percolates down the tree structure on its left (alternatively, right) side in accordance with an Edge Feature Principle which Miller and Halpern formulate, landing ultimately on the leftmost (or rightmost) lexical item in the phrase, where the feature is realized morphologically.

On an edge feature account of phrasal affixes, then, case features in Korean would be the semantically relevant ones, and these would be marked on the NP in an NP-over-VP structure like (24). A case feature like [ACC] would then launch a right EDGE feature, say "[R:ACC]", and this EDGE feature would percolate down the right side of the tree to the rightmost lexical item (which also happens to be the head of the VP in Korean), where it would be morphologically realized. The situation would then be the one depicted in (32).



Such an account is exactly parallel to the one offered by Yoon within the PhrCon approach, except that the NP-over-VP structure of the DLC account is assumed rather than the dedicated phrasal affix nominalizer structure in (24). Hence, there is in principle no impediment to the DLC account providing essentially the same analysis of phrasal affix case markers in these languages.

Second, for a language containing case markers that are regular lexical affixes, there is an equally simple account of the presence of such case markers on the DLC account. Case-marking is an external property of NPs, as it involves the ways in which NPs can combine with larger phrases. Hence, we expect it to be governed by the $\langle \text{N} \rangle$ portion of

DLCs. Since both regular Ns and gerunds are specified <NI>, in a language which requires case-marking on gerunds all that we need to do is allow the morphological rules of the language to refer to that external category in adding the needed suffixes. Thus, for such a language, the requisite rules need to manipulate <NIY>, rather than simply <NIN> (= N), as schematized in (33). When Y = N, the case marker will be suffixed to a regular N, and when Y = V, it will be suffixed to a gerund form.⁹

(33) General form of morphological case-suffixing rules for languages with lexical case markers:

[<NIY>; CASE:α] → <NIY> A[CASE:α]

Hence, even for languages with lexical case markers we would still be able to accommodate the presence of such cases affixes on gerund forms.

3.2 Lack of plural markers. The second challenge is the flip side of the first one. Languages with dedicated nominalizers allow typical N affixes to attach to the morphologically derived form, but languages with double-duty nominalizers, like English and Spanish, do not. In particular, we need to insure that plural marking is disallowed on gerunds in these languages on the DLC account.

Response. As much recent work on the semantics of plurality has shown (cf. Link 1983, Ojeda 1993 and the numerous references cited there), plurality can be taken to be an *internal* property of Ns, on a par with the notions of count and mass to which it is related. Therefore, we should expect only those items which are internally <IN> to allow markers indicating plurality. Because gerunds and regular Vs are <IV> items, we should not expect them to occur with plural markers, and in general, they do not. (Vs can, of course, occur with plural *agreement* markers, but that involves a very different sort of construction.) Thus, the fact that English GPs with plural gerund forms (29b) are ungrammatical actually follows directly on the DLC analysis.

Furthermore, because this is a general property of these categories on the DLC approach, we should expect plural markers not to be able to occur with gerund forms across languages. That is, we should expect this property to apply regardless of whether the language has double-duty or dedicated nominalizers, and this appears to be correct. For instance, in Turkish, which has a dedicated gerund suffix *-mE*, it is not possible to pluralize the gerund form in a GP (34).

(34) (Turkish dedicated nominalizer *-mE*)

- a. [(Ben-*im*) pahalı bir hediye al-ma-m] Ays3e-yi kor-ut-tu
 1.SG-GEN expensive one present buy-GER-1.SG Ayshe-ACC fear-CAUS-PAST
 'My buying an expensive present frightened Ayshe'
- b. * [(Ben-*im*) pahalı bir hediye al-ma-lar-*ım*] Ays3e-yi kor-ut-tu
 buy-GER-PLUR-1.SG

As a different sort of example, in Chichewa (and generally in the Bantu languages), there is a special class marker for the double-duty infinitive/gerund form, but there simply is no corresponding plural class marker, as there are in the case of the clearly singular classes.¹⁰

⁹ Something needs to be added to this account to prevent Y from being either A or P. In a language that is otherwise like Korean but with lexical case markers, this problem does not arise, since neither of these two other categories exist in Korean. In languages which have A and P, if the language does not have the asymmetrical DLCs <NIA> and <NIP>, then the CASE rules in the language can still take the form in (33), since only <NIN>'s (regular Ns) and <NIV>'s (gerunds) can serve as inputs to the rule in such a language. It is only for languages which have As and Ps and also <NIA> or <NIP>, undoubtedly a very small number at best, that we would need to add further restrictions on Y in (33).

¹⁰ It should be noted that the plural marker *-tul* in Korean can be attached to gerund forms as in (i). However, this is clearly an instance of the 'plural copy' construction (Kuh 1988, Lee 1991, Hong 1991).

The DLC account therefore makes a more general prediction regarding the absence of plural markers with gerunds than the PhrCon approach does, and one which appears to be correct. We will return to this issue again in section 5.

3.3 Presence of clitic pronouns. The third problem involves the facts about Spanish clitics mentioned in note 8. In Spanish, which permits clitic pronouns to attach to finite Vs, such clitics also can attach to the gerund form heading a GP (35a), whereas this is not permitted in lexical nominalizations (35b).

- (35) (after Yoon 1996a (11), (12))
- a. nuestro cantar-*las* le irrita
our sing.INF-them him irritates
'our singing them irritates him'
 - b. *el cantar-*las* de Maria
the sing.INF-them of Maria
'Maria's songs them'

Again, the DLC account needs to provide an analysis of such forms.

Response. This problem has as simple a solution as the one for the plural marker case. Object clitic pronouns are VP-internal properties in Spanish, and so we expect them to be associated with IV>. Hence, we expect that both regular Vs and gerunds should allow object clitic pronouns in this language, and as we have seen above, they do.

3.4 Coordination asymmetry. The DLC analysis assumes that the gerund marker in both dedicated and double-duty nominalizer cases is a nonnull affix. Consequently, it is not obvious that the DLC analysis can account for the coordination contrast in (30) vs. (31), given that the contrast appears to rest on the positioning of a full affix in one case and a null affix requiring a specially marked constituent in the other.

Response. First, it is not immediately obvious that data like (30) and (31) should be taken as supporting the idea that GPs are formed in Korean by a full affix while they are formed in English by a -Ø affix. The reason is that such coordination facts form some of the prime evidence distinguishing a lexical affix from a phrasal/edge affix. That is, lexical affixes must occur on the heads of each of the conjuncts or just once in the initial or final conjunct. (See Yoon 1989, 1990; Lapointe 1990, 1992; Miller 1991; we will return to

Kim 1994), illustrated in (ii) (= Lee 1991 example (1)).

- (i) % ai-tul-i [sensayngnim-uy chayk-ul ilk-um]-i(-tul) mwusepta
child-PL-NOM [teacher-GEN book-ACC read-GER]-NOM-PL be.afraid
'The children were afraid of [the teacher's reading the book]'
- (ii) ai-tul-i Tom-eykey(-tul) ppgang-ul(-tul) manhi(-tul) cwuesseyo(-tul)
child-PL-NOM Tom-DAT(-PL) bread-ACC(-PL) much(-PL) gave(-PL)
'The children gave Tom a lot of bread'

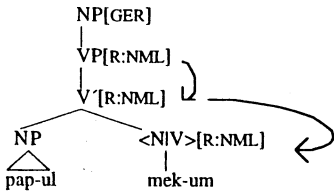
Any of the parenthesized copies of the plural marker *-tul* in (ii) are optionally possible. These copies represent a kind of plural agreement with the subject of the clause; they can only occur when the subject is taken to be semantically plural (whether or not the subject is expressly marked with the plural marker). (For arguments that the subject trigger of plural copying needs to be thought of in semantic rather than syntactic terms, see Hong 1991.) In no way can the plural copies be thought of as expressing plurality of the element to which they are attached. This fact is clear in examples like (ii), where neither *Tom* nor the *V cwuesseyo* 'gave' are inherently plural. All of these facts hold as well when *-tul* is attached to a GP in Korean. Thus, in (i) the parenthesized *-tul* is optional, it can only occur because the subject of the larger *S* is plural, and it cannot mean that multiple readings of the book by the teacher have occurred. Hence, there is ample justification for excluding *-tul* in Korean from the domain covered by the generalization predicted by the DLC account of plural forms presented here.

these issues again in section 5 below.) As the discussion above makes clear, the *-ing* ending in English exhibits the properties of a lexical affix (30), but the *-um* ending in Korean exhibits the properties of a phrasal/edge affix (31). Therefore, rather than saying anything about the presence of a $-\emptyset$ vs. a nonnull affix, the facts in (30) and (31) can just as easily be interpreted as saying simply that we are dealing with a lexical affix on the one hand but with a phrasal/edge affix on the other. These facts thus do not immediately offer any particular support for positing a $-\emptyset$ affix in English.

Given that this is a reasonable interpretation of the data, it is important to show that the DLC approach can accommodate the fact that Korean *-um* and *-ki* produce <NIV> lexical items while acting as phrasal/edge affixes. In order to do this, we need to do two things: (i) we need to provide an account of nominalizing affixes which are themselves edge affixes, and (ii) we need to show how edge affix nominalizers behave in coordinate structures so as to result in the Korean facts in (31). It turns out that these tasks are relatively easy to accomplish if we adopt an EDGE feature analysis of phrasal affixes like the one discussed above.

Concerning task (i), so long as the relevant EDGE feature lands on a lexical item that can be an <NIV> item there is no difficulty here, since it is the dual category of the lexical head which determines the NP-over-VP structure of the GP; the presence of the EDGE feature simply determines the presence of the affix. This works out just fine in the case of Korean (36), since phrases are head-final in this language, and so the [R:NML] EDGE feature ends up on the head, an item which can be an <NIV> item when *-um* is attached.

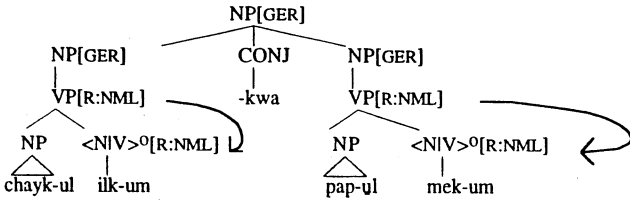
(36) Korean *-um* as an edge affix —



Turning to task (ii) — how to account for the coordination asymmetry between English and Korean in (30) and (31) — this issue appears to be a harder one to address, precisely because no one has looked at how coordination in general is supposed to work within the DLC approach. However, it turns out that, here too, we can account for the behavior of the Korean coordination examples in a straightforward way.

In (37) we have the structure for (31a), the one in which the nominalizer occurs in both conjuncts.

(37) Structure for (31a) [[chayk-ul ilk]VP-um]NP-kwa [[pap-ul mek]VP-um]NP

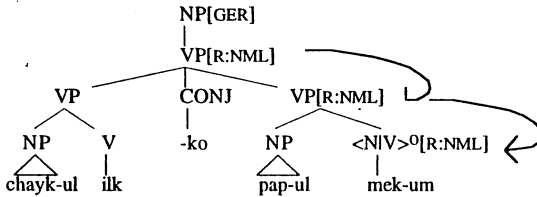


In this structure, the NP nodes at the top are conjoined, and each bears the [GER] feature that we have been assuming to be the semantically relevant feature for phrasal

nominalizations involving edge affixes. The NPs in each of the conjuncts then has a VP for a head daughter, and the [GER] feature on each of these NPs launches its own [R:NML] feature. As a result, a nominalizing affix appears in each conjunct.

In (38) we have the structure for (31b), in which the nominalizer occurs only in the final conjunct.

(38) Structure for (31b) [[[chayk-ul ilk]_{VP-ko} [pap-ul mek]_{VP}]_{VP-um}]_{NP}



Here, the top NP node, marked [GER], immediately changes over to a VP, which is now marked [R:NML] as a result of the Edge Feature Principle of Miller and Halpern 1992. The VPs are then conjoined, but only the rightmost one can bear the [R:NML] feature, as a consequence of the account of EDGE features in Miller and Halpern 1992.¹¹ Hence, there is a plain VP in the left conjunct, while the VP in the right conjunct bears [R:NML]-marking on all of its rightmost nodes, and it is lexically headed by an <NIV> item. This is just the result that we want.¹²

The coordination asymmetry between languages like English and Korean therefore turns out not to represent a serious challenge to the DLC account, once a suitable approach to phrasal affixes is adopted within the analysis

4. Theoretical Difficulties with the DLC Account

In addition to the analytic challenges dealt with in the preceding section, there are at least three potential theoretical problems with the DLC approach as well.

4.1 The same affix in both lexical and phrasal nominalizations. The first theoretical problem involves one of the main points which Yoon makes in both of his papers: the fact that in many languages, the same affix is used to mark both lexical and

¹¹ That account assumes that there are absolute, universally defined Linear Precedence statements ordering all [L:α] constituents first and all [R:α] constituents last among their sister constituents:

- (i) a. [L:α] < X
- b. X < [R:α]

Hence, if two sister constituents ever were to bear the same EDGE feature, they would both be competing for the rightmost (or leftmost) position, a situation that cannot occur. Hence, the VP conjuncts in (34) cannot both be marked [R:NML].

¹² This analysis derives support from the fact that the conjunctive particles *-kwa* and *-ko* in these examples can only occur in the respective structures. That is, switching the conjunctions here leads to ungrammaticality. Within the DLC account, these clitic elements place the following restrictions on their left hosts:

- (i) a. *-kwa* takes an [N> constituent as left host
- b. *-ko* takes a [V> constituent as left host

These facts cannot be used as an argument for the DLC account over the PhrCon approach, however, since it is just as easy to state the restrictions on hosts within that analysis (i.e., *-kwa* takes an N' host, and *-ko* takes a V' host).

phrasal nominalizations. As we have seen above, the PhrCon account directly incorporates this as part of the analysis. In contrast, it would appear that the DLC analysis fails to account for this correlation in these languages, since it only deals with the phrasal type of nominalization and says nothing directly about the lexical type.¹³

Response. It turns out that the DLC analysis is really not at a disadvantage here. In languages which use the same affix for both kinds of nominalization, all that we need to do is have the relevant affix take a V base (i.e., a <VIV>) and convert it into an <NIV> output form in the morphology. When Y = N, we have the derivation for a lexical derived nominal based on this affix, and when Y = V, we have a gerund as output which will head a GP. In contrast, any language for which this correlation does not hold will simply have V being converted into <NIV> by the affix which creates the gerund form.¹⁴ This is not quite all of the story, of course, since a language which permits gerunds in the morphology must also have appropriate PS rules in the syntax to support the required NP-over-VP structures, but this is a kind of correlation between the morphology and the syntax which is quite commonplace. After all, a language is not going to allow a word formation rule to create lexical derived Adj's if its syntax does not permit APs. Likewise, a language is not going to have a morphological rule creating gerund forms if the necessary syntactic rules to permit the NP-over-VP structure do not exist.

There is, of course, an important unresolved empirical issue that this discussion has not addressed. As noted earlier, Yoon is careful not to claim that all languages with phrasal nominalizations use the same affix for lexical derived nominals. This caution is undoubtedly a result of the fact that at present it is not known whether this universal generalization is correct. If it proved at some future point to be true, then that would be a fact that we would want to capture in our synchronic grammars. In the meantime, though, as pointed out above, the DLC approach is as capable of capturing the correlation when it does occur as the PhrCon analysis is.

4.2 The multiplicity of DLCs. The next problem has to do with the fact that languages exhibit different types of phrasal nominalizations, typically with somewhat different properties. Thus, Yoon 1996b (p.83) notes that English has two types of GP, often referred to as the POSS-ING and ACC-ING types in the generative literature. The first kind, which I have been referring to in the present work as a "GP", involves the nominalization of a VP, while the second kind appears to involve the nominalization of an IP. There is a similar split in Korean; one kind of nominalization (Yoon 1989's Type III) is a GP which involves a VP being nominalized, while the second kind (Type II) involves NOM-marked subjects, can include tensed Vs, and looks for all the world like a nominalized tensed IP. And according to Yoon, in Spanish CPs can apparently be nominalized as well as VPs and IPs. The single type of DLC posited for regular GPs will not directly account for nominalizations of IP or CP. New types of DLCs will thus be required to handle these various other kinds of phrases, leading to a proliferation in the number and kinds of DLCs allowed and hence to a weakening of that theory.

¹³ As an example of the problems that the DLC is supposed to encounter in this area, Yoon 1996b cites the case of the Korean suffix *-tap* 'like', which converts Ns into Vs. He notes, following earlier work by Shi 1995, that there are two versions of this suffix, a lexical one and a phrasal one. Yoon then notes that a DLC of these constructions would take the head marked by *-tap* in the phrasal case to be a <VIN>, but it is unclear what we should then say about the lexical version of the affix.

As proposed immediately below in the text, one alternative on the DLC account would be to simply have the lexical version be a <VIV> and let the rule attaching *-tap* turn N's (i.e., <NIN> items) into <VIY> items. However, this account assumes that a DLC approach to the phrasal version of *-tap* is the appropriate one to take. From the single example that Yoon presents, it is hard to tell; it seems just as plausible to say that *-tap* is a derivational suffix which has lexical and phrasal affix counterparts. In any case, more work will need to be done before we can conclude that a DLC account of these constructions is even the appropriate one here.

¹⁴ Again, depending on the language, something might need to be said to prevent Y from being A or P. See fn. 9 above.

Response. In the passage in which he raises this objection, Yoon (1996b, p.83) actually suggests a reasonable DLC type of analysis for the non-VP nominalized phrases that he cites, basically the ones in (39).

- (39) Under the DLC account —
- a. English ACC-ING: <N | INFL[-TNS]>
 - b. Korean Type II: <N | INFL[α TNS]>
 - c. Spanish CP-nom: <N | COMP[*que*]>

Nonetheless, he suggests that there are two problems with such an approach. First, under the Strong Lexicalist Hypothesis assumed by the DLC approach, appeal to an abstract functional node like INFL in the syntax is generally disallowed. Second, in Korean the INFL node actually corresponds to a bound affix, posing even greater concerns for lexical integrity.

However, neither of these problems is insurmountable, even within a Strong Lexical framework. While INFL and COMP can be highly abstract syntactic elements under a Principles and Parameters treatment, in English and in Spanish at least there are overt lexical items that can be argued to occur in these positions, thus providing concrete support for their existence. Furthermore, the bound tense affixes that can occur in Korean Type II nominalizations are phrasal/edge affixes, as Yoon 1990 clearly demonstrates. Hence, they are going to have some presence in the syntactic structure of any tensed phrase, either as a separate item (in the analysis of Yoon 1990) or as a feature (in an account like that of Miller and Halpern 1992). Thus, positing DLCs like those in (39), though perhaps not exactly those, would seem to be well within the realm of possibilities for a Strong Lexicalist approach like the DLC analysis.

It therefore appears that the real problem that these other kinds of nominalized phrases create for the DLC approach is the one that we started with, namely, that they demand a proliferation in the number and kind of DLC countenanced in that analysis. Given that the definition of a DLC in (2) permits only major lexical categories as the first and second parts, the addition of DLCs like those in (39) clearly represents an extension of the original proposal. The question is, How pernicious is this extension? The answer depends on what basic kinds of lexical categories one assumes in a non-DLC system. If IP and CP are the main kinds of functional phrases, it seems entirely natural that I and C would be included within the general framework of DLCs, at least to the extent that I and C would also be allowed as the second parts of asymmetrical DLCs.¹⁵ In that case, mixed category phrases headed by asymmetrical DLCs like those in (39) would be expected, and the extension would in fact be empirically motivated by the constructions which Yoon alludes to.

On the other hand, we can turn the question about proliferation around and ask, How would the PhrCon account handle these kinds of nominalizations? While the subcategorization for the *-um* affix in Korean in (22) permits nominalization of lexical V_s and full VPs, it does not permit nominalized IPs as it is stated, since IP \neq Vⁿ, for any *n*.

¹⁵ Assuming that the full range of categories includes N, V, A, P, I, and C, then (2a) in the definition of a DLC could be modified to read as follows:

- (i) X and Y are any category.

This is not sufficient, though; it would allow the two new symmetrical DLCs, <I I> and <C C>, that we want, but it would also allow an additional sixteen asymmetrical DLCs, namely all those in which I or C occurs with one of the major lexical categories. However, if we view I and C as extended functional heads, in a sense similar to that of Grimshaw 1991, 1997, then (a) the cases involving <VI or IV> disappear, because they are subsumed under the definitions of I and C as extended heads of V, and (b) the remaining cases with N, A, or P as internal parts disappear, because in those cases there would be no internal V for the I or C to be an extended head of. This leaves just the six asymmetrical DLCs <{N, A, P} I>, <{N, A, P} C>, i.e., clauses which function externally as NPs, APs, or PP_s, and this seems just the range of possibilities that we want here.

Hence, we apparently must add the subcategorization [IP[+TNS] ___]NP to that of *-um, -ki* in Korean.¹⁶ Similar remarks hold of the other kinds of non-VP nominalized phrases as well, and so in addition to the subcategorizations for dedicated and zero-morph nominalizers for GPs, there must also be subcategorizations like those in (40).

- (40) Under the PhrCon account —
- a. English ACC-ING: [IP[-TNS] ___]NP
 - b. Korean Type II: [IP[αTNS] ___]NP
 - c. Spanish CP-nom: [CP[*que*] ___]NP

It therefore appears that essentially the same information has to be added to the PhrCon analysis in order to handle the non-VP nominalized phrases as needs to be added to the DLC account. The only difference is that in the PhrCon account, the added information is encoded in subcategorization frames for the phrasal affixes, while in the DLC analysis, the additional information involves new asymmetrical DLCs. Neither analysis appears to hold an advantage over, or be at a disadvantage to, the other along this dimension.

4.3 Weakening of endocentricity. Perhaps the most serious problem with the DLC approach, according to Yoon, is that it weakens the strong notion of endocentricity that is typically assumed in work on syntax. Thus, according to Yoon, the DLC approach seeks "to maintain endocentricity and lexicalism simultaneously" (1996b, p.82), but at the same time the problems he presents that have just been discussed in sections 4.2 and 4.3, plus the fact that there are denominalized Vs in Japanese that appear to involve a mixture of N and V properties that cannot easily be packaged into a DLC of the sort defined above, suggest to him that a fuller analysis of the facts in terms of DLCs will lead to a serious breakdown in the usual understanding of endocentricity, on which much of our notions about syntactic structure are based.

Response. It is true that the DLC analysis involves a weakening of the notion of endocentricity usually assumed in one current syntactic framework. However, (i) there are several logically distinct parts to the notion of endocentricity that we need to keep separate, (ii) not all current syntactic frameworks maintain the full versions of these separate parts, and (iii) in any case, the DLC approach weakens only one of the parts and in a quite restricted way.

The logically distinct notions are these:

- (41) *Headedness* — A phrase has a head if, when you remove that item, you no longer have a phrase (null pro-form and discourse ellipsis contexts aside).
- a. *Strong Headedness Condition* — All phrases are headed.
 - b. *Weak Headedness Condition* — Some phrases are headed.
- (42) *Property-sharing* — A phrase that is headed shares some/all of its grammatical properties with its head.
- a. *Complete Property-sharing Condition* — All grammatical properties are shared.
 - b. *Partial Property-sharing Condition* — Some grammatical properties are shared.

Property-sharing (42), in one version or another, is the central idea behind endocentricity proper. Versions of X' phrase structure which have been adopted within the Principles and Parameters framework over the past decade or so have sought to maintain the strongest possible conditions, (41a) and (42a), i.e., all phrases are headed and complete property-sharing obtains. This view is what we might call *strict endocentricity*. However, not all current generative frameworks adopt this assumption. In LFG for example, not all phrases

¹⁶ Yoon (1996a) proposes a different account of the Korean Type II phrases, but it only addresses the issue of NOM-marking on the subject of the phrase, and it does not treat the other properties which such phrases exhibit. This turns out to be a problem for the PhrCon account, a point to which I will return shortly.

are headed, and so only Weak Headedness (41b) holds, while headed phrases involve (nearly) Complete Property-sharing (42a).¹⁷ GPSG, on the other hand, adopts Strong Headedness (41a) (since all phrases are headed) but assumes only the weakest version of Partial Property-sharing (42b). In fact, although this framework assumes that there is some feature-sharing between a phrasal node and its head daughter, it is left entirely open what the exact feature-sharing relation might be, and so it permits the full range of possibilities, from strict identity between the two nodes to total mismatch. Such an assumption is in effect functionally equivalent to claiming that Property-sharing (42) simply does not hold in this framework. Indeed, it is precisely the looseness of these assumptions about property-sharing that lead to the problems alluded to earlier with Pullum's GPSG account of GPs.

Like GPSG, the DLC approach maintains Strong Headedness (41a) as well as Partial Property-sharing (42b), but it does so in a way that tries to maintain reasonably tight constraints on when property-sharing fails to occur. In particular, it allows lexical category information not to be shared between a mother node and a head daughter node, but only when the lexical head of the phrase is an appropriate asymmetrical DLC. In other cases, that is with regular phrases headed by symmetrical DLCs, strict endocentricity (Strong Headedness (41a) plus Complete Property-sharing (42a)) continues to hold.

Basically, this is the whole point of the DLC approach. The idea is to retain the notion of headedness while loosening the notion of property-sharing just enough to account for the properties of the usually encountered types of mixed category phrases, without allowing other, unwanted kinds, while at the same time maintaining strict endocentricity for standard sorts of phrases. The approach does this by (a) dividing each category into sets of external and internal properties and then (b) allowing the external property set of one category to be paired with the internal property set of any category, its own or one of the others. Hence, the phrase as a whole always has a lexical head, the only kinds of external properties that it can have form one of the sets of external properties that are allowed for categories in general in the language, and the only internal properties that it can have form one of the sets of internal properties for categories in general in the language.

The kind of weakening to Complete Property-sharing allowed in the DLC account thus appears to be the minimal amount required in order to accommodate the facts of mixed category phrases while still maintaining strict endocentricity for standard phrases (i.e., those headed by symmetrical DLCs). As far as I can tell, every analysis of GPs or other mixed category phrases based on transformational or Government-Binding approaches which tries to maintain strict endocentricity for those phrases either ends up in serious empirical trouble or has to bend the underlying theory in otherwise undesirable ways (see Lapointe (in preparation) for extensive discussion of this point). It thus seems reasonable to attempt to formulate an analysis which maintains most of the tenets of strict endocentricity (i.e., Strong Headedness (41a) plus Complete Property-sharing (42a)) for regular phrases headed by symmetrical DLCs, while loosening property-sharing just enough to permit mixed category phrases (Strong Headedness (41a) plus a constrained version of Partial Property-sharing (42b)) for phrases headed by asymmetrical DLCs.

Therefore, contrary to the concerns raised by Yoon, the adoption of the DLC approach does not lead to anything like a complete breakdown in our understanding of endocentricity — far from it, for as we have seen, strict endocentricity is loosened on this

¹⁷ I have included the hedge "nearly" here for the following reason. As far as I am aware, setting aside the explicitly exocentric phrase types *S* and *S'*, analyses within standard LFG (Bresnan 1982) that have been proposed for facts in particular languages have the property that all phrase-lexical head pairs share all morphosyntactic properties, so that Complete Property-sharing holds in those analyses. However, it does not appear that there is any principle which explicitly requires that under standard LFG assumptions. In particular, there appears to be nothing preventing the following situation. A feature (TF) = ↓ is introduced by an element attached to *X'* or *XP*. As a result, both *X'* and *XP* are marked for the feature *F*, but because there is no down-arrow constraint forcing the feature lower in the structure, the lexical head *X⁰* fails to be marked for the feature. In such a case, only Partial Property-sharing would hold. An example of this might be the feature *DEFINITE* introduced by a *Det* at the NP level; the feature would be specified on the immediately dominating NP node, but not on the lower *N'* and *N⁰* nodes in the structure. Hence, there seems to be some question as to the degree of completeness of property-sharing within this framework.

account in only one highly circumscribed part of syntactic theory, and then only in a tightly constrained manner.^{18,19}

5. Problems with the PhrCon Account

We have now seen that, with the exception of the remaining issues involving the coordination asymmetry that need to be dealt with and to which we will return in the next section, all of the analytic and theoretical problems raised by the PhrCon analysis for the DLC account can be handled in a straightforward and satisfactory way. As noted earlier, though, there are a number of difficulties which arise in the PhrCon account itself. In this section we will consider six such problems.

5.1 Appropriateness of the zero-morph approach. From the start, it is not clear that the zero-derivation approach is appropriate for the double-duty type of phrasal nominalizer. In morphology, zero-derivation produces headless structures. This is the whole point behind English examples like the *V to grandstand* which has the regular past tense form *grandstanded* rather than the otherwise expected irregular form **grandstood*. The *V grandstand* comes from the *N grandstand* via zero-morph conversion; the resulting *V* form is headless, and in particular *stand* does not act as the head, and so its otherwise expected irregular past form *stood* is unavailable in the derived *V* form *grandstand*. Hence, the only possible form is the one derived from the regular past tense affixation rule, resulting in the form *grandstanded*.

The problem that this fact poses for the PhrCon analysis is just this. On the PhrCon analysis, the properties of affixation are supposed to be taken over directly from the morphology into the syntax. But as we have already seen, GPs (and mixed category phrases in general) are headed. Hence, we have an element which normally creates headless structures in the morphology producing headed structures in the syntax. This is not a welcome state of affairs on the PhrCon account.

One way around this problem would be to say that zero-derivation is different in the syntax than in the morphology, but there are two immediate problems that arise with this approach. (a) We lose the supposed parallelism between the kinds of affixation that apply in the two components, a parallelism that the PhrCon account seeks to maintain. (b) We need an explicit account of just how zero-derivation (and perhaps other types of affixation) is different in the two components, and at present there is none. Consequently, it is really not obvious from the start that this is the correct approach that we should take to the properties of gerund forms created using the double-duty affixes.

5.2 Classification of nominalizing affixes. A second problem with the PhrCon approach is that it conflates two potentially separate dimensions: (i) dedicated vs. double-duty nominalization and (ii) phrasal vs. lexical affixation. In particular, the PhrCon approach seems to identify dedicated nominalizers exclusively with phrasal affixation and double-duty nominalizers with lexical affixation.

However, there does not seem in principle to be anything preventing these two dimensions from varying independently from one another. After all, the first dimension is

¹⁸ The Japanese forms that Yoon mentions head phrases which have properties which do not directly parallel those of mixed category phrases that we typically find across languages (see Sells 1996 and Morimoto 1998 for recent discussions). It has never been the claim of the DLC approach that all cases of phrases with unusual mixtures of grammatical properties are to be handled by positing asymmetrical DLC heads for them. On the contrary, the assumption of the DLC account is that the use of asymmetrical DLCs is to be limited to those cases involving "standard" sorts of mixed category phrases. Hence, it seems reasonable to search for a non-DLC analysis for the Japanese constructions in question.

¹⁹ As a final objection to the DLC approach, Yoon (1996b) characterizes the importation of DLCs into syntactic theory as an "exotic modification[...]" In light of the fact that it is possible to integrate asymmetrical DLCs together with the theory of standard categories in a coherent fashion 'suggests that they are less exotic than they might otherwise appear at first blush. On the other hand, it is not at all clear that the use of zero-morphs as phrasal nominalizers within the PhrCon account involves any less exotic a modification to grammatical theory, as observed directly below in section 5.1.

defined in terms of the function that the affix performs (converting an element into a nominal constituent of some sort), while the second dimension is defined in terms of the attachment properties of an element, and across languages there are few necessary correlations between particular functions and the ways those functions are expressed. Consequently, we should expect to find languages representing all four of the types derived from crossing the categories in these two dimensions, and in fact we find at least three of the four.²⁰

- (43) Classification of languages with nominalizers of different types
(shading indicates language types predicted on the PhrCon approach)

	Phrasal affix	Lexical affix
Dedicated nominalizer	Korean, Turkish	W. Greenlandic
Double-duty nominalizer		English, Spanish, Latin

I have not yet been able to find a convincing case of a language with a double-duty nominalizer that is a phrasal affix, but we would in any case expect such a language to be fairly rare. One of the functions performed by a double-duty nominalizer is to serve as a nonfinite V form. Such forms generally tend to be expressed by lexical affixes, since they are often historically residual forms derived from more remote elements. So what we would need in order to fill the lower left cell in (43) is an infrequently occurring *phrasal* nonfinite V form which in addition does double duty as a nominalizer creating NP-over-VP GP structures, themselves a relative rarity among syntactic constructions.

On the other hand, though, the lack of hard cases of that type does not really matter. The existence of at least one language with a dedicated nominalizer that is also a lexical affix, the upper right corner of (43), is sufficient to show that we cannot maintain a strict correlation which requires dedicated nominalizer = phrasal affix and double-duty nominalizer = lexical affix. We will be looking in greater detail in section 5.4 at the gerund-forming affix in West Greenlandic, where we will see that it indeed has the characteristics appropriate for a language in this cell of (43). Therefore, it is reasonable to conclude that the assumption of the PhrCon account that there is a strict correlation between nominalizer type and affixation type is incorrect.

5.3 Treatment of phrasal affixes. While on the one hand the PhrCon analysis adopts an overly tight correlation between nominalizer type and affixation type, on the other it adopts an overly broad notion of what counts as a phrasal affix. The PhrCon account assumes that two kinds of affixes count as phrasal affixes. First, there are affixes (let us call them 'Class A') which can be argued to occur on phrase-marginal words rather than on the lexical heads of phrases; among these are English POSS 's, Korean tense markers, and Turkish nominal affixes. Second, there are affixes ('Class B') whose properties are determined at least partly on the basis of factors in the syntax, even though they are realized exclusively on the lexical heads of phrases. Class B includes all the remaining inflections not already belonging to Class A. Let us refer to the assumption that Classes A and B form a single category the 'Broad Phrasal Affix' approach.

However, just because some of an affix's properties are determined syntactically, it does not automatically follow that the affix should be viewed as a "phrasal affix" in the strict sense. An alternative view, based on work by Nevis 1985, Zwicky 1987, Lapointe 1990, 1991, 1995, Miller 1991, Miller and Halpern 1992, argues that Classes A and B do

²⁰ Steven intended to present certain arguments based on West Greenlandic (WG). The subsection on WG was incomplete, and the argument to be made is not straightforward. I have reduced the WG section below to the abstract idea of the argument to be made, pointing out why it is not straightforward. (Peter Sells)

not form a single category, as they are to be identified with the following largely disjoint set of characteristics.²¹

- (44) Attachment properties of phrasal affixes
- a. show phrasal phonological properties
 - b. attach to phrase-marginal words
 - c. can be omitted from all but the first or last conjunct in a coordination (depending on whether they are attached to the left- or right-marginal words of phrases)
- (45) Attachment properties of lexical affixes
- a. show lexical phonological properties
 - b. attach to the lexical head of a phrase
 - c. must occur in all conjuncts of a coordinate structure

On this analysis of the lexical/phrasal affix distinction, only Class A affixes are taken to be pure phrasal affixes, since only they exhibit the properties in (44). Class B affixes would be treated as involving inflectional markers which happen to be attached as lexical affixes. That is, the latter markers would be analyzed as elements whose morphosyntactic properties are determined (at least partly) by the syntax, but which nevertheless exhibit the lexical attachment properties in (45). Thus, on this type of account, inflections are not simply identified with one type of affixation but are instead divided between the two classes on the basis of their attachment properties — those which exhibit phrasal attachment appear in Class A, while those with lexical attachment properties belong to Class B. Let us refer to this alternative view of lexical vs. phrasal affixes as the 'Restricted Phrasal Affix' approach.

The first problem for the PhrCon account in adopting the Broad Phrasal Affix view is that its adoption creates difficulties for one of the empirical predictions made by the PhrCon approach. As we have already seen in section 3.2, the DLC approach makes a broader prediction than the PhrCon analysis with respect to plurality in GPs. It predicts, apparently correctly, that GPs can never be pluralized, whereas the PhrCon analysis predicts that GPs cannot be pluralized only in languages with double-duty nominalizers. The failure of the PhrCon account to make the full prediction here is due in part to its assumption about what counts as a phrasal affix. If all inflections are classified as phrasal affixes, then it would in principle be possible for a plural marker to attach to a gerund in a language where both the plural and gerund affixes were "phrasal". As we have seen, though, this is not what we find. Instead, plural markers are just as ungrammatical in languages like Turkish with dedicated *phrasal* nominalizers as they are in other types of languages. Hence, this is one area where the PhrCon approach fails to make a correct prediction, and this failure is due in part to the Broad Phrasal Affix view which it adopts.

The second problem that arises for the PhrCon approach is that while it adopts the Broad Phrasal Affix view, it actually needs to adopt something like the Restricted Phrasal Affix view in order to account for certain kinds of facts. To see this, consider the example of case suffixes. On basically any current syntactic framework, the morphosyntactic properties of these markers are determined at least in part by the syntax. So, given its acceptance of the Broad Phrasal Affix view, the PhrCon account would analyze case suffixes as phrasal affixes, belonging to Class B.

Suppose now that we had a language with case suffixes which exhibited the cluster of properties in (45). The PhrCon approach would claim that properties (45a, b) follow from the actual morphological attachment of those suffixes to the lexical head of the various phrases. However, it would be hard pressed to account satisfactorily for property (45c). As phrasal affixes, these case markers should be attachable either (i) to all NPs in a coordinate NP structure, yielding as many instances of the suffixes as there are conjuncts, or (ii) to the root NP of the coordination, yielding a single occurrence of the suffix in the final conjunct, as we saw above in section 3.4. But a suffix exhibiting the properties in

²¹ The sets of properties in (44) and (45) overlap when the lexical heads of phrases happen to be the marginal elements in their phrases.

(45) does not allow this second possibility (ii), and there is no obvious way to rule it out if we assume that case suffixes of this type are phrasal under the Broad Phrasal Affix interpretation.

On the Restricted Phrasal Affix view, though, there is no problem accounting for such case suffixes. A case suffix of the sort we are considering has to be attached to the lexical head N of each NP conjunct. If it were not, either the head of that conjunct would not be a well-formed fully inflected syntactic word, or the morphosyntactic features of that NP would not allow it to combine with the other NPs in the coordination, or both. Since this appears to be the natural way to account for the requirement that these kinds of case suffixes have to occur in each conjunct in a coordinate NP, it would seem that the PhrCon approach actually needs to include the kind of distinction which the Restricted Phrasal Affix view adopts in distinguishing Class B affixes as lexical rather than phrasal.

It is important to point out that the kind of case suffixes that we have been discussing do not represent a minor, relatively infrequent type. On the contrary, they are quite ubiquitous. Most of the Indo-European languages which employ case suffixes, for instance, exhibit the attachment properties in (45).

As an illustration, consider Latin. In terms of (45a), although there are not many phonological alternations involving case forms in this language, several which appear to be thoroughly lexical apply to inflected N forms. For example, in the second conjugation, some Ns whose stems end in *r* use \emptyset rather than the expected *-us* in the NOM with an epenthetic *e* breaking up any resulting *Cr* cluster (*agro*: 'field.DAT/ABL' but *ager* 'field.NOM' vs. **agrus*; *puero*: 'boy.DAT/ABL' but *puer* 'boy.NOM' vs. **puerus*). In the third conjugation, stems ending in coronal stops drop the stops before the NOM ending *-s* (*mi:lit-is* 'soldier-GEN' but *mi:le-s* < *mi:lit-s* 'soldier-NOM'; *cu:sto:d-is* 'guard-GEN' but *cu:sto:s* < *cu:sto:d-s* 'guard-NOM'; *ment-is* 'mind, soul-GEN' but *men-s* < *ment-s* 'mind.NOM'). Furthermore, various Ns lack one or another case form, and most fifth declension Ns lack plural forms altogether, while some have only NOM/ACC plurals, lacking the oblique case forms in the plural. None of these sorts of restricted phonological processes apply across words at the phrasal level, and affixes at that level (i.e., clitic elements) typically exhibit their own restrictions which leave lexical level affixes, including case suffixes, unaffected.²² Hence, there appears to be ample reason for saying that lexical, and not phrasal, phonological processes apply to case suffixes in Latin.

With regard to property (45b), a cursory investigation of even elementary Latin sentences is sufficient to make it clear that Latin case suffixes have to attach to lexical heads of phrases and not to phrase-marginal words.

Finally and most crucially, concerning (45c) Latin case suffixes must occur in each conjunct of a coordinate structure and cannot occur in only the first or last.

²² For instance, the conjunctive enclitic *-que* attaches to the first word of the last conjunct in a coordinate structure, and it generally attaches to that word without regard to lexical class or phonological shape. There is, however, one restriction on the occurrence of *-que*: if the first word in the target conjunct is a monosyllabic Prep (with some exceptions — see Lewis and Short 1966), *-que* attaches to the following word. Thus we find cases like the following.

- | | | | | |
|--------|----------------------------------|-----------------------|------------------------|--------------|
| (i) a. | bonae | | bellae-que | |
| | good.FEM.NOM.PL | | pretty.FEM.NOM.PL-CONJ | |
| | 'good and pretty' | | | |
| b. | ob | ea:s-que | | re:s |
| | on account of | those.FEM.ACC.PL-CONJ | | thing.ACC.PL |
| | 'and on account of those things' | | | |

This restriction makes sense in terms of phrase-level phonology. If at least some varieties of Latin required monosyllabic Preps to form a phonological word with the following major lexical item, and if the rule attaching *-que* required it to attach as a suffix to the first phonological word of the phrase, then the placement of *-que* would follow immediately. The important point to note, however, is that such restrictions are stated entirely in terms of phrasal phonological considerations. They have nothing to do with the lexical attachment of affixes, and more specifically, the case affixes in Latin never obey constraints like these.

- (46) a. pocul-um et cra:te:r-a
 cup-NOM.SG and bowl-NOM.SG
 'cup and bowl'
 b.* pocul- et cra:te:r-a
 c.* pocul-um et cra:te:r-

Part of the reason for these facts is that a N stem in Latin cannot count as a fully inflected word-form in the syntax if it lacks suitable CASE-NUMBER inflections, regardless of the syntactic context in which it occurs. This is so much the better for the claim being defended here, though, since this generalization amounts to saying that the Latin case suffixes have to be attached to stems morphologically, i.e., that they have to be lexical and not phrasal affixes.

Case markers in Latin thus exhibit all the properties in (45) and hence need to be classified as lexical affixes, even though their morphosyntactic properties are determined phrasally, in the syntax. As argued above, in order for the PhrCon approach to handle the coordination properties of inflections like the Latin case markers, it is necessary for it to adopt something like the Restricted Phrasal Affix view, in which Class A and B affixes are treated separately.

5.4 Languages with lexical nominalizers and lexical CASE. On the Restricted Phrasal Affix view argued for above, the PhrCon approach would seem to make the following prediction.

- (47) We should not find a language with case markers in which:
 a. there is a nominalizer which creates gerund forms heading GPs,
 b. case markers can appear on gerund forms in GPs, and
 c. the case markers are lexical and not phrasal affixes.

The reasoning behind this prediction is clear. On the PhrCon account, nominalizations — whether dedicated or double-duty — are produced by affixation in the syntax, converting a VP into an NP. On this account, the lexical head of the whole construction is a V. However, we should then not expect lexical case markers, i.e., those which exhibit the properties in (45), to attach to the head in such constructions, since lexical case markers can only attach to Ns on the PhrCon approach. Hence, there should never be case markers on gerund forms in such a language.²³

Notice that this type of language is different from the type which Yoon uses to motivate the PhrCon account. In those languages (notably, Korean), both the nominalizer and the case suffixes are phrasal affixes on the view of phrasal affix outlined above, since such affixes in Korean and similar languages have the properties in (44) rather than those in (45).

Contrary to the prediction made by the PhrCon approach, though, it is relatively easy to find languages with just the properties listed in (a) - (c) in (47). Specifically, languages with lexical nominalizers which also have lexical case markers are prime candidates for this type. Two such languages are Latin and West Greenlandic.²⁴ Let us briefly consider the behavior of these languages with regard to (47).

²³ If in (47) we used the Broad Phrasal Affix view, the PhrCon account would still make the same prediction, but it would do so for a trivial reason: on the looser notion of phrasal affix, all case markers are assumed to be phrasal affixes, and so no language could have property (47c). However, it would then not be clear how the PhrCon approach would analyze languages like Latin and West Greenlandic, which fill the upper right cell of (43), since the attachment properties of their case suffixes are thoroughly lexical. In light of the fact that, as argued in the preceding section, the PhrCon account needs to adopt the Restricted Phrasal Affix view in some form, we seem justified in using this stricter version of the lexical/phrasal affix distinction in (47).

²⁴ In an earlier draft of this paper, Steven had planned to include a section on the Finnish "fourth infinitive" (Toivonen 1995) as another instance of the cluster of properties in (47) [Peter Sells].

5.4.1 Latin. In Latin, gerund forms are created by adding *-nd* onto what is traditionally called the imperfect stem, the one which is also used as the base form for the imperfect tenses, the present infinitive, and the present participle. An example is given in (48).

- (48) *artem [ve:ra ac falsa di:iudica-nd-i:] (De Or. ii.157)*
 art.ACC true.ACC.PL and false.ACC.PL distinguish-GER-GEN.SG
 'the art [of distinguishing true things from false things]'

The question that we need to ask about such examples is whether the phrases headed by gerund forms are true GPs in the sense intended here. The answer is clearly "yes." As standard Latin handbooks like Allen and Greenough 1903 and Hale and Buck 1966 show, such phrases can occur anywhere a NP can occur, except in subject and direct object positions where infinitives are used instead. Inside these phrases direct objects and other verbal complements take the same case endings they would otherwise have in tensed clauses, and adverbial as opposed to adjectival modifiers and negative particles can occur. Hence, these phrases appear to have just the kind of NP-over-VP structures of true GPs. Moreover, as (48) clearly shows, like any other "noun-like" item in Latin, gerund forms take CASE-NUMBER inflectional suffixes. The case suffixes used for gerunds are those for neuter Ns in the second declension class, so there is nothing particularly unusual about the inflections used here. Hence, it appears that Latin exhibits both property (a) and property (b) in (47). Finally, as was argued in the preceding section, Latin case markers are lexical and not phrasal affixes. It therefore seems reasonable to conclude that Latin gerunds stand as a counterexample to the claim made by the PhrCon account that languages with the properties in (47) should not exist.

It might be objected that the gerund construction in Latin is not the most solid of cases to present as a counterexample to this claim of the PhrCon approach. The weakness derives from the fact that gerunds were apparently not used a great deal in Latin. First, as already noted above, GPs in Latin were not used as the subjects or direct objects of containing clauses; GPs only occurred in oblique phrase contexts.²⁵ Hence, the construction is not nearly as regular and productive as GPs are in English or a number of other languages. Second, there was apparently a marked preference for the use of the gerundive construction in place of the straight gerund in classical Latin. The gerundive is a kind of passive participle, formed by adding default first and second declension Adj agreement markers onto the same stem used for the gerund (i.e., the imperfect V stem + *nd*). The gerundive construction involves placing what is notionally the direct object NP in the CASE appropriate for the whole phrase, and then having the remaining gerundive phrase agree with that NP. An example is given in (49).

- (49) *cupidita:s bell-i: gere-nd-i: (B.G. 1, 41, 1)*
 desire.NOM.SG war-GEN.SG carry.on-GER-GEN.SG.NEUT
 'desire of carrying on war' (lit., 'desire of war being carried on')

Third, because of the above tendency, the gerund construction tended to be used primarily with intransitive V bases, or with transitive ones used intransitively. These three points taken together suggest that the gerund was a minor grammatical category in Latin that perhaps should be set aside.

There are two reasons for not dispensing with the Latin gerund so quickly, however. First, while the gerundive might have been preferred over the gerund with transitive V bases, the latter could nonetheless be used as an alternative to the former, even to the point of occasionally occurring in an adjacent phrase conjoined to a gerundive:

- (50) [*neque co:nsili-i: habe-nd-i:*] [*neque arm-a capie-nd-i:*] (B.G. 4, 14, 2)
 neither counsel-GEN have-GER-GEN nor arm-ACC.PL seize-GER-GEN

²⁵ Latin gerunds are listed in the handbooks as having an ACC case form but no NOM form. However, ACC-marked GPs only occur when they are governed by Preps which take ACC complements; they do not occur with Vs taking such complements.

spati-o: dat-o:
 time-ABL.SG give-PASS.PART-ABL.SG
 'with time being given [neither to take counsel] [nor to seize arms]'
 (lit., '...neither for counsel being taken nor for seizing arms')

The construction in the first bracketed phrase is participial, with the notional object in the GEN indicating purpose, and the gerundive V form agreeing with the N. However, the construction in the second bracketed phrase clearly involves a plain gerund, since only the derived V form bears the GEN marker, and the accompanying N (*arma*) is in the ACC. If the second phrase had been rendered in the gerundive construction, it would have been *armo:rum capiendo:rum* lit., 'for arms being seized'. Thus, while gerundives might have been preferred to gerunds when the V stem was transitive, gerunds were hardly an unused derived form for such Vs.

Second, when gerunds were used, the phrases that they headed had all the properties described earlier. Hence, the grammar of Latin has to say something about why this construction has the properties that it has when it does occur. Since those properties are those expected under the DLC account — those of NP-over-VP structures lexically headed by <NIV> items — it seems entirely appropriate to say that Latin gerund phrases are indeed of this type.

Given these two reasons, we appear fully justified in setting aside the objection that the Latin GP construction should not be considered in the present context. Having done that, though, allows us to reach the conclusion that we drew before: Latin presents a counterexample to the claim of the PhrCon approach that no language should have the cluster of properties (a) - (c) in (47).

5.4.2 West Greenlandic. [Note. Peter Sells] Steven had planned to include a section on West Greenlandic (WG), but the argument remained incomplete at the time of his death, and I have omitted this section. The essential facts can be gleaned from Sadock 1994. WG has various nominalizers which are lexically attached, nominalize a VP, and take lexical case markers (see e.g., Sadock (1994, 221)). However, subsequent currently unpublished work by Sadock has confirmed an aspect of his 1994 analysis, namely that the internal VP is dominated by N' when nominalized, and not directly by NP. Thus such nominalizations allow both adverbial and adjectival modifiers. This last aspect of these constructions constitutes the potential gap in the argument that Steven was trying to put together.

5.5 The treatment of Korean Type II phrases. Yoon (1996a) proposes that both Type II and Type III nominalizations in Korean can be derived from the same basic structure, that in (24) above. He notes (p.347) that

subjects can be licensed VP-internally (Yoon 1994a, 1994b). Thus, if the subject stays within VP, it will get NOM case, yielding a different type of phrasal nominalization, with NOM-ACC case array (Yoon's type II nominalizations). If it moves to SpDP, it will be assigned GEN, yielding type III nominalizations.

However, there is more to the distinction between Korean Type II and Type III nominalizations than just the difference in NP case arrays that occur in them. Lapointe and Nielsen 1996 presents the following table summarizing the differences between these two types of phrases.

(51) Differences between Korean Type II and Type III phrases (after Lapointe and Nielsen 1996, p.311)

	Type II	Type III
a. Allows S-Adv modifiers	yes	no
b. Case marking on internal subject	NOM	GEN
c. Allows tense elements	yes	no
d. Allows internal scrambling	yes	no

These facts, plus the areas of overlap between the two types of nominalized phrases, argue quite strongly that Type III phrases are internally VPs, while Type II phrases are internally IPs, as Lapointe and Nielsen observe. Hence, we cannot simply derive Type II phrases in Korean from the structure in (24), since as already noted, $IP \neq V^n$ for any n , and so at least this claim made on behalf of the PhrCon analysis is incorrect.

All is not completely lost for the PhrCon analysis here, of course, since we can still assume, as was suggested in section 4.2 above, that the phrasal nominalizers in Korean are simply specified for attaching to either VP or IP[+TNS]. As also noted above, though, this analysis requires separate subcategorization frames and separate structures for the two types of nominalized phrases. Hence, there is no argument to be made in favor of the PhrCon approach and against the DLC account based on the claim that both types of Korean nominalized phrases are derived from the same syntactic structure on the PhrCon account, since that claim does not hold.

5.6 Intermediate-level nominalizations. There is a problem lurking in the PhrCon account of languages which use the same form for lexical and phrasal nominalization, mentioned briefly in passing in fn. 6 above. In the selectional frames posited in the PhrCon account for Korean and English in (22) and (25) above, repeated here as (52) and (53), the $n = 0$ case yields lexical derived nominals, and the $n = 2$ case results in maximal bar-level phrasal nominalizations, as we have already seen.

(52) (= (22) above)

Korean nominalizer: $-um : [V^n \text{ ___ }]_{Nn}$

(53) (= (25) above)

English nominalizer: $-\emptyset : [V[PR.PRT]^n \text{ ___ }]_{Nn}$

Another possibility exists, though, namely, $n = 1$. This should form an intermediate bar-level GP, in which an N' immediately dominates a V' head. But N' phrases typically allow the presence of AP and relative clause modifiers through recursion of the N' node. Hence, it should be possible to find adjectival and relative clause modification of the gerund in such structures. However, such modification of the gerund, as opposed to VP-Adv modification, is not allowed in English or Korean, nor as Lapointe (to appear) argues, is this possible in Turkish or Chichewa. At least these languages apparently permit only maximal bar-level nominalized phrases. The problem for the PhrCon analysis is that it does not have an explanation for why languages like the ones just cited only have $n = 2$ phrasal nominalizations but not $n = 1$ type nominalizations.

In fairness to the PhrCon approach, it must be noted that this problem cannot be turned into an argument in favor of the DLC account. The reason is that the DLC approach faces a separate but related problem of its own involving intermediate bar-level nominalized phrases. Specifically, the DLC account as set forth in section 1 claims that the only kinds of GPs that can exist are those in which a maximal XP node immediately dominates a maximal YP head. Such a claim is consistent with the facts from the four languages cited above, which disallow AP and relative clause modification. However, there is at least one fairly well documented construction which allows some AP modification, namely the type of *infinito sostantivato* phrase in Italian which Zucchi (1993) refers to as the 'VP-infinitive NP' (henceforth, "VP-INF"), examples of which are given below.

(54) il suo mormorare parole dolci
the his/her whisper.INF word.PL sweet.PL
'his/her whispering sweet words'

(55) il suo continuo partire improvvisamente
the his/her continual leave.INF suddenly
= 'his/her continually leaving suddenly'

Zucchi argues convincingly that the structure of such nominalized phrases involves N'-over-VP structure. There are no NP-over-VP GPs in Italian.²⁶ The problem for the DLC approach is that (a) it does not permit intermediate-level GPs like the VP-INF type that are found in Italian, and (b) the expected NP-over-VP GP does not exist in the language. Hence, the DLC account is not without its own problems in this area.²⁷ Nonetheless, in terms of identifying difficulties with the PhrCon approach, there is no question that the absence of intermediate-level GPs in the well-documented languages mentioned above represents a legitimate problem which the PhrCon account faces.

6. Conclusions

As described in detail in sections 3, 4, and 5, all of the objections to the DLC account of nominalized phrases raised by the PhrCon analysis can be met in simple and natural ways without requiring any substantive modifications to the theory of DLCs itself, so long as we have a workable theory of phrasal affixes that can be used along with the DLC approach. On the other hand, despite the impressive array of facts about nominalized phrases which the PhrCon account can cover, that analysis suffers from its own serious drawbacks, as I have argued in section 5. In addition, the problems with the PhrCon analysis noted in that section can be taken as arguments in support of the DLC account, since the latter handles these issues in a completely straightforward way. It therefore appears that the DLC approach, and not the PhrCon account, is the more attractive of these two alternatives.

It is important to emphasize what I have *not* shown here. In particular, I have not demonstrated that it is not possible to have an account of NP-over-VP GPs in which at least some affixes apply to whole phrasal units. Indeed, in various previous works I have argued for an account of phrasal affixes in which those affixes act as independent units in the syntax. So an account which distinguishes lexical and phrasal affixes along the lines in (44) and (45) and in which (i) phrasal affixes attach directly to phrases in the syntax, but (ii) lexical affixes attach independently from syntactic processes, would have most of the features of the account presented here. What I have shown, though, is that an approach in which (a) double-duty nominalizers are generated via zero-morphs in the syntax, (b) the Broad Phrasal Affix view is adopted, and (c) dedicated nominalizers are identified with phrasal affixes while double-duty nominalizers are identified with lexical affixes faces serious difficulties. It must be left for future research to try to distinguish among the various possibilities that remain for treating phrasal affixes as features or as distinct constituents in the syntax.

Appendix

There remain a few additional points that are not critical to the main points of the paper, but which should nevertheless be considered, however briefly, in a thorough comparison of the DLC and PhrCon approaches.

²⁶ There is another type of nominalized phrase in Italian, but as Zucchi argues, the structure of that nominalization involves an NP dominating a nonfinite S. In the terms discussed earlier, such a nominalization would have NP-over-IP structure and would have <NI I[-TNS]> as its lexical head.

²⁷ One way to try to deal with the problem for the DLC approach is simply to add a parameter that requires the change-over point to be at the intermediate level just in the case of asymmetrical DLCs. Thus, <NIV>, without any marking, would be interpreted as saying the change-over point involves maximal bar-level phrases, whereas <NIVInonmax> would indicate that the change-over point is at the nonmaximal, X' level. This predicts that the unmarked type of GP across languages should be the kind which involves maximal bar-level change-over, and that appears to be the case. Presumably a similar modification could be made to the PhrCon account. However, this general approach is really just a technical patch and does not represent any deep insight into solving the problem.

It is worth noting in passing that while Zucchi claims that the internal phrase in the VP-INF type of GP is a full VP, there is really very little evidence to support that claim, as opposed to saying that the phrase is just V', and so it remains an open issue just what bar-level the internal phrase needs to have. Resolution of this issue would have implications for the solution to the problems discussed in the text.

A.1 A further potential theoretical problem with the DLC account. Yoon raises another issue, which we might refer to as "the inspection of the morphology problem", at two points in his 1996b discussion. It is perhaps worth citing these passages in their entirety:

Thus, by examining the morphological (or morphosyntactic) make-up of the lexical head, one ought to be able to tell what its distributional properties will be. If the head is a <NIV> DLC, one must find an exponent of this duality somewhere. The primary candidate of this exponence in English is the *-ing* suffix. But we cannot say that its presence is enough to guarantee the duality. This is because the nominalizing affix may also be used in lexical nominalizations, to derive nouns, or <NIN>. Thus, inspection of the morphology will not tell us whether we are looking at a run of the mill derived noun or one of these exceptional verb-nouns. (1996b, 82).

...You are looking at the same affix and need to figure out which phrasal "level" is being nominalized. The inspection of the morphology of the DLC is of no help again. (1996b, 83).

However, it is quite unclear what the challenge posed by this problem really is. The objection raised in these passages would seem to hold equally well of the \emptyset affix in English and the *-um* and *-ki* affixes in Korean which the PhrCon analysis posits, since on that account, all of these other affixes are also capable of serving as phrasal or lexical nominalizers, and just inspecting the morphology of these items is not going to tell us which type we may be dealing with in any specific situation.

The situation seems to be the following. Inspection of the morphology, on either the DLC or the PhrCon approaches, is going to tell us (a) that there is an affix attaching to a V-type element at some bar level, (b) either that the affix creates an <NIV> item (DLC account) or that it turns a VP into an NP (PhrCon account), and (c) the same affix creates lexical Ns from Vs, in those languages where this is the case (on both accounts and by the same rules, as noted above). While the morphology does not directly tell us in (b) on the DLC account that the <NIV> heads a GP, the rest of the grammar certainly does, since the correlation between having an <NIV> lexical head and being an NP-over-VP structure for a GP is explicitly built into the grammar on the DLC analysis (cf. the discussion in section 1 again). True, determining whether an affix is a phrasal or lexical nominalizer requires more than inspection of the morphology — we have to look at the syntax and its interactions with the morphology as well — but there is no reason why we shouldn't be able to look at this information, given that we are interested in determining what the syntactic properties of phrases headed by these items are. After all, we should be able to use whatever parts of the grammar we need in order to determine the grammatical properties of some (type of) item that we are interested in.

Furthermore, while the passages quoted from Yoon 1996b above seem to imply that on the PhrCon account all we need to do is inspect the morphology to determine the properties of the phrases headed by phrasal nominalizers, this implication is not correct. On the PhrCon analysis, the affix is attached to a phrase in the syntax, and at the same time it is realized on the head of that phrase in the morphology. Hence, even on the PhrCon account we really need to inspect both the syntax and the morphology when we determine what the syntactic properties of the phrasal nominalizer is in a given language. Along this dimension, then, it would seem that the DLC and PhrCon analyses are on a par, and the inspection-of-the-morphology objection falls wide of the mark.

A.2 An additional problem with the PhrCon account. A further problem with the PhrCon approach, which Yoon himself notes (1996a, fn.18), is that Det's are allowed in Spanish GPs (cf. (A1)), while they are disallowed in English GPs (A2).

- (A1) (= Yoon 1996a (16))
El cantar La Traviata de Maria

the sing.INF L.T. of Maria
'Maria's singing La Traviata'

- (A2) (= Yoon 1996a, fn.18, (i), (ii))
 a. *John's the singing the song
 b. *PRO the singing the song

Because the PhrCon analysis adopts Abney's (1987) DP hypothesis, Yoon is forced to follow Abney in extending a "doubly-filled COMP" account to the English GP cases. When SPEC DP is filled, as it would be in (ii.a,b), D cannot contain an overt lexical item but instead can only contain a null AGR element. Spanish, on the other hand, would simply not be restricted in this way, so that an overt D can (and in general must) occur when SPEC DP is filled.

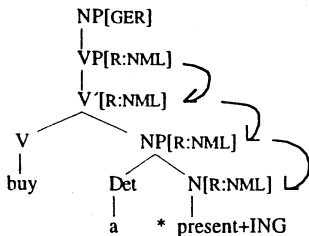
There is no need to import a condition like the variable doubly-filled COMP constraint into the DLC approach, however. In Spanish the D appears to the left of the head N and the POSS *de*-PP appears on the right, so there is no problem in general allowing both to occur. In English, only the DET or an NP[POSS], but not both, can optionally occur in the same position at the front of regular NPs, while only the NP[POSS] option is possible in GPs. The difference between English and Spanish in this regard would therefore appear to be a language-particular fact that can be captured quite easily by positing distinct PS rules for the two languages:

- (A3) a. Spanish NPs: NP → DET N' (PP[POSS;*de*])
 b. Spanish GPs: NP → DET VP (PP[POSS;*de*])
 (A4) a. English NPs: NP → (DET / NP[POSS]) N'
 b. English GPs: NP → (NP[POSS]) VP

The rules in Spanish are thus completely parallel to one another, differing only in the head position. In English, on the other hand, the rules are not quite parallel, in that the gerund rule in (A4b) simply does not allow the DET option permitted in the regular NP rule (A4a). Given the dual option permitted in the SPEC NP position in regular English NPs, it is not terribly surprising that English allows a less complex set of possibilities in the marked GP rule, and it is to be expected that this would be one area where languages would differ from one to the next.

A.3 Further comments on EDGE features. If a language like English had a gerund affix that was an edge marker (let us call it "-ING"), and if the relevant EDGE feature were again [R:NML], we would obtain the ungrammatical result in (A5) (cf. (32)).

(A5) *-ING* as an edge affix in English —



The problem here is that the EDGE feature percolates downward onto the rightmost lexical item, which in this case happens to be the head N of the direct object NP, an item which cannot be a gerund (as a gerund ending, *-ING* turns Vs, not Ns, into <NIV> items). Note

that the problem that arises here is not dependent on the choice of [R:NML] as the EDGE feature. While [L:NML] would work in this particular case, percolating downward onto the leftmost element, which here happens to be the V, in other cases that feature would end up landing on a range of items that can precede the main V in a VP, including Adv's, nontensed Aux's, and the negative particle *not*, and these items are no more capable of having gerund forms than Ns are. Hence, using a left EDGE feature does not solve the problem.

It appears then that the DLC account, together with a reasonable analysis of edge affixes, leads to the following prediction.

(A6) *Prediction.* The only languages with phrasal nominalizations as edge affixes are those in which lexical heads occur at the same margin as the marking of the EDGE feature.

At present I am not aware of any counterexamples to this prediction, but it is an interesting question to determine whether such counterexamples may in fact exist.

However, the discussion here leads naturally to the following speculation. It would appear that we need to distinguish two types of edge affixes. One type does not specifically have an effect on the morphological, syntactic, or semantic properties of the word to which it attaches; it simply registers some morphosyntactic property of the whole phrase. An example of this type would be the English POSS marker 's. The other type imposes conditions on its base, requiring the base to belong to and/or change to a specific category. Examples of this would be the Korean nominalizing suffixes *-um* and *-ki*. These requirements are naturally imposed on the lexical head of the phrase in question, and because the affixes we are examining are phrasal affixes, these sorts of markers will only occur when the head serving as the affix's base occurs at the appropriate phrase-margin. It thus seems plausible that the prediction in (A6) could be strengthened to the following:

- (A7) If an edge affix imposes restrictions on its base, then
- a. the base will be the lexical head of the phrase containing the semantically relevant feature that launches the EDGE feature for the affix, and
 - b. heads of that phrase type (potentially, heads of phrases in general) will occur on the same phrase margin that the edge affix occurs on.

Further research will be needed to determine whether such a constraint is in fact on the right track.

References

- Abney, S. 1987. *The English Noun Phrase in Its Sentential Aspect*. Unpublished doctoral dissertation, MIT.
- Allen, J.H. and Greenough, J.B. 1903. *Allen and Greenough's New Latin Grammar for Schools and Colleges: founded on comparative grammar*. Boston: Ginn and Co.
- Anderson, S. 1992. *A-morphous Morphology*. Cambridge: Cambridge University Press.
- Bresnan, J. (ed.) 1982. *The Mental Representation of Grammatical Relations*. Cambridge, MA: MIT Press.
- Gazdar, G., Klein, E., Pullum, G., and Sag, I. 1985. *Generalized Phrase Structure Grammar*. Cambridge, MA: Harvard University Press.
- Grimshaw, J. 1991. "Extended Projection." Ms. Brandeis University.
- Grimshaw, J. 1997. Projection, Heads, and Optimality. *Linguistic Inquiry* 28, 373-422.
- Hale, W.G. and Buck, C.D. 1966. *A Latin Grammar*. University of Alabama Press.
- Hong, K.S. 1991. *Argument Structure and Case Marking in Korean*. Unpublished doctoral dissertation, Stanford University.
- Jackendoff, R. 1977. *X-bar Syntax*. Cambridge, MA: MIT Press.
- Kanerva, J. 1987. "Morphological Integrity and Syntax: The Evidence from Finnish Possessive Suffixes". *Language* 63, 498-521.
- Kim, Y. 1994. "A Non-Spurious Account of "Spurious Korean Plurals." In Y.-K. Kim-Renaud, ed., *Theoretical Issues in Korean Linguistics*. Stanford, CA: CSLI Publications, 303-323.
- Kuh, H. 1988. "Plural Copying in Korean." In S. Kuno, et al., eds., *Harvard Studies in Korean Linguistics* 2, 239-250.
- Lapointe, S. 1990. "EDGE Features in GPSG." In K. Deaton, et al., eds., *Proceedings of the Twenty-sixth Regional Meeting of the Chicago Linguistic Society*. Chicago: Chicago Linguistic Society.
- Lapointe, S. 1991. "Korean Verb Markers and Autolexical Theory." In M. Alexander ed., *Proceedings of the Second FLSM Meeting*. University of Michigan Working Papers in Linguistics: Ann Arbor MI.
- Lapointe, S. 1992. "Life on the Edge: Arguments in Favor of an Autolexical Account of Edge Inflections." In C. Canakis, et al., eds., *Proceedings of the Twenty-eighth Regional Meeting of the Chicago Linguistic Society*. Chicago: Chicago Linguistic Society.
- Lapointe, S. 1993a. "Constraints on the Morphological Forms of Gerundive Nominalizations." Paper presented at the Annual Meeting of the Linguistic Society of America, Los Angeles.
- Lapointe, S. 1993b. "Dual Lexical Categories and the Syntax of Mixed Category Phrases." In A. Kathol and M. Bernstein, eds., *Proceedings of the Eastern States Conference on Linguistics*, 199-210. Ithaca, NY: Cornell University.
- Lapointe, S. 1995. "On Deriving the Government Constraint for Incorporation and Inflection." In E. Schiller et al., eds., *Developments in Autolexical Syntax*. Berlin: Mouton de Gruyter, 131-187.
- Lapointe, S. 1996. "Comments on Cho and Sells' 'A Lexical Account of Inflectional Affixes in Korean.'" *Journal of East Asian Linguistics* 5, 73-100.
- Lapointe, S. To appear. "Cross-Linguistic Evidence for the Dual Lexical Category Approach to Gerund Phrases." In J. Blevins, ed., *A Festschrift for Emmon Bach*.
- Lapointe, S. In preparation (unfinished ms.). *Gerund Phrases: An Essay on Category Mismatches*.
- Lapointe, S. and Nielsen, S. 1996. "A Reconsideration of Type III Gerunds in Korean," in N. Akatsuka and S. Iwasaki, eds. *Proceedings of the Fifth Japanese/Korean Linguistics Conference*. Stanford, CA: CSLI Publications.
- Larson, R. 1985. "Bare NP Adverbials." *Linguistic Inquiry* 16(4), 595-621.
- Lee, H.-G. 1991. "Plural Marker Copying in Korean." *Studies in the Linguistic Sciences* 21, 81-105.
- Link, G. 1983. "The Logical Analysis of Plurals and Mass Terms: A Lattice-theoretical approach," in R. Bauerle, C. Schwarze, and A. von Stechow, eds., *Meaning, Use, and Interpretation of Language*, 302--323. Berlin, de Gruyter.

- Miller, P. 1991. *Clitics and Constituents in Phrase Structure Grammar*. Unpublished doctoral dissertation, University of Utrecht.
- Miller, P. and Halpern, A. 1992. "English Possessives and the Syntax of Morphological Features." *Proceedings of FLSM III*.
- Morimoto, Y. 1998. "A Lexical Account of Phrasal Nominalization." Paper presented at the 72nd Linguistics Society of America Annual Meeting.
- Nevis, J. 1985. *Finnish Particle Clitics and General Clitic Theory*. Unpublished doctoral dissertation, The Ohio State University.
- Ojeda, A. 1993. *Linguistic Individuals*. Stanford, CA: CSLI Publications.
- Pullum, G. 1991. "English Nominal Gerund Phrases and Noun Phrases with Verb Phrase Heads," *Linguistics* 29, 763-799.
- Sadóck, Jerrold M. 1994. "Syntactic Activity and Inertness in West Greenlandic Derivational Morphology," in H. Harley and C. Phillips, eds., *The Morphology-Syntax Connection (MIT Working Papers in Linguistics 22)*. Cambridge, MA: Department of Linguistics.
- Sells, P. 1996. "Case, Categories and Projection in Korean and Japanese." In H-D. Ahn, et al., eds., *Morphosyntax in Generative Grammar*, 47-62. Seoul: Hankuk Publishing.
- Shi, C.-K. 1995. "Head Movement and the Morphosyntax of *-i*, *-tap*, *-hi*, *kath*." *Studies in Generative Grammar* 5, 419-456. Seoul: Hankuk Publishing.
- Toivonen, I. 1995. "A study of Finnish Infinitives." Unpublished Bachelor's thesis, Brandeis University.
- Yoon, J. 1989. "Korean Nominalizations, Lexicalism, and Morphosyntactic Interface." Paper presented at the Annual Meeting of the Linguistic Society of America.
- Yoon, J. 1990. "Korean Nominalizations and Morphosyntactic Interaction." Ms. University of Illinois, Urbana-Champaign.
- Yoon, J. 1996a. "Nominal Gerund Phrases in English as Phrasal Zero Derivations." *Linguistics* 34, 329-356.
- Yoon, J. 1996b. "A Syntactic Account of Category-Changing Phrasal Morphology: Nominalizations in English and Korean." In H-D. Ahn, et al., eds., *Morphosyntax in Generative Grammar*, 63-86. Seoul: Hankuk Publishing.
- Zucchi, A. 1993. *The Language of Propositions and Events: Issues in the Semantics of Nominalization*. Dordrecht: Kluwer Academic Publishers.
- Zwicky, A. 1987. "Suppressing the Zs." *Journal of Linguistics* 23, 133-148.