Nominal gerund phrases in English as phrasal zero derivations*

JAMES HYE SUK YOON

Abstract

In this paper, I argue that contrary to commonly held belief, the -ing *affix in nominal gerund phrases (NGPs) in English does not function as a nominalizing element. The primary evidence for the argument comes from the failure of the* V-ing *element in NGPs to take nominal inflections (Pullum 1991), unlike nominalized verbs heading phrasal nominalizations in languages with dedicated nominalizing affixes (such as Korean), which behave morphologically as nominals. However, in order to account for the fact that (i)* V-ing, *when used in lexical deverbal nominalizations, behaves morphologically as a noun, and (ii) the same element is used in both lexical and phrasal nominalizations (i.e. NGPs), I propose that both types of nominalizations are zero-derived from projections of the present participle form of the verb — the difference being that zero derivation applies* LEXICALLY *to* V^0 *in lexical deverbal nominalizations while it applies* PHRASALLY *to* V^n *in NGPs. The proposal for English receives support from a similar analysis for lexical and phrasal nominalizations in Spanish, both of which are based on the infinitive. The paper also provides an account of the aforementioned morphological difference between the deverbal elements in English and Spanish nominalizations on the one hand, where nominalizations are based on an inflectional form of verbs (VFORM), and those in languages with dedicated nominalizers, such as Korean, on the other.*

The analysis proposed in the paper presupposes a view of morphosyntactic interaction in which morphological combinatoric operations such as affixation and zero derivation apply in both the lexicon and syntax. To the extent that it succeeds in answering descriptive and conceptual questions about the behavior of lexical and phrasal nominalizations in different languages, the analysis proposed here provides support for this particular view of morphosyntactic interaction.

1. Introduction

With the exception of Pullum (1991), in most recent analyses of phrasal nominalizations in English — the nominal gerund phrase (abbreviated

Linguistics 34 (1996), 329–356

0024–3949/96/0034–0329

NGP hereafter) — the suffix *-ing* is taken to be a nominalizing element (Baker 1985; Abney 1987; Milsark 1988; etc.).

In fact, the current consensus seems to be that an analysis of NGP that fails to attribute nominal properties to *-ing* suffers from theoretical and conceptual drawbacks. The theoretical drawback has to do with violations of endocentricity. If *V-ing* is not considered to have nominal properties, one needs to posit a structure for the NGP in which a nominal phrase dominates a verbal phrase and where the nominal properties of the NGP are not lexically anchored, because such a structure lacks a nominal head. This violates usual assumptions about endocentricity as incorporated in X-bar theory. On the other hand, if one treats *-ing* as a nominal head, the nominal properties of NGPs can be pinned on it and an analysis in conformity with endocentricity can be constructed, if we are willing to entertain a few additional assumptions.[1]

Pullum's (1991) analysis of NGPs meets the theoretical desideratum of endocentricity, because in his analysis, while the NGP is a noun phrase with a VP head, it is still a headed (endocentric) structure technically. However, his analysis shares the intuition with pre-X-bar theoretic analyses (such as that of Schachter 1976) that *V-ing* is not a nominal element but a(n) (inflectional) form of the verb.[2]

Specifically, Pullum regards English NGPs as being licensed by the following ID schema:

(1) NP→(NP[POSS]), H[VFORM:prp]

Now, the technicality that allows a structure to be endocentric even when the head daughter and the mother differ in major category features is the *head feature convention* (HFC) of GPSG (Gazdar et al. — GKPS — 1985). The HFC, which ensures identity of HEAD features between a head daughter and mother, is a default that can be overridden by contrarily specified information in an ID schema.

The ID schema in (1) stipulates that the head has a value for the feature VFORM, which is only licensed on a verb (by a *feature cooccurrence restriction*, FCR), while the mother category is stipulated to be an NP. Pullum argues that despite the mismatch of major category features, the NGP is a headed structure nonetheless, since other properties are inherited from the head to the mother in the usual way (e.g. the value for BAR and [−SUBJ] specification), and since syntactic diagnostics such as extraction prove consistent with the posited head status of the verbal projection. I shall not repeat his arguments here but assume their correctness in what follows.

1.1. *The role of* -ing *in lexical and phrasal nominalizations*

Lapointe (1993a), in a criticism of Pullum (1991), points out that while Pullum's analysis may be technically consistent with endocentricity, the drawback of such an analysis is that it leaves the role of *-ing* completely accidental. That is, Pullum's analysis fails to answer the question of why, among the set of VFORMs in English,[3] it is the present participle form (i.e. VFORM:prp) that happens to be found in the verbal head of NGP. That is, if the N-over-V structure in NGPs is sanctioned by a stipulated mismatch in major category values between the head daughter and mother, why is it that such mismatches are impossible when the verbal head is, say, a past participle form (VFORM:psp)?

More generally, an approach like Pullum's might be said to miss a recurring cross-linguistic generalization concerning deverbal nominalizations — that the same (de)verbal form is used in both lexical and phrasal nominalizations, not only in English but in a number of languages.[4] As we shall see, the same nominalizing suffix is found in both lexical and phrasal nominalizations in Korean (Yoon 1989) and Cuzco Quechua (Lefebvre and Muysken 1988). Likewise, in Spanish (Plann 1981; Ojeda 1986; Yoon and Bonet-Farran 1991), the same VFORM (the infinitive) is employed in both. Given this, it would be reasonable to require of an adequate account of phrasal nominalizations for a language where this generalization holds (such as English) that it provide a plausible answer to it.

The alternative that is proposed by Lapointe possesses the potential to explain the generalization. For Lapointe, the phrasal nominal properties of NGPs do not arise out of a stipulated mismatch between the head daughter and the mother in an ID rule but are "lexically anchored," in the following sense. Specifically, the *V-ing* form in NGPs is taken to be an example of a *dual lexical category* (DLC), notated ⟨N|V⟩. Such a category is assumed to project verbally except for its topmost layer.[5] Unlike Pullum's account, the role of *-ing* in NGPs is no longer accidental. It serves an integral function as an affix that derives the DLC ⟨N|V⟩ from a regular verbal category ⟨V|V⟩.

Such an account can also suggest an answer to the question of why *-ing*, which is also the affix used in LEXICAL (deverbal) nominalization, is the particular suffix that is also used to derive the ⟨N|V⟩ category in phrasal nominalizations.[6] The fact that *-ing* serves as a deverbal nominalizer in lexical nominalizations shows that it functions to derive nominal from verbal categories. No other verbal inflectional affix has this property.[7] Therefore, it is not at all surprising to find *-ing* functioning to derive the lexical head (a DLC) of PHRASAL nominalizations (i.e. NGPs).

The relevant contrast between *-ing* and other verbal inflectional suffixes is shown below:

(2) *VFORM in lexical nominalizations (action nominalizations):*
   a. Your *giving* (of the book) (to Bill) (√PRP)
   b. *Your gave (of the book) (to Bill) (*FIN)
   c. *Your *given* (of the book) (to Bill) (*PSP)
   d. *Your *give* (of the book) (to Bill) (*BSE)

(3) *VFORM in phrasal nominalizations (NGPs):*
   a. Your *giving* the book to Bill (√PRP)
   b. *Your *gave* the book to Bill (*FIN)
   c. *Your *given* the book to Bill (*PSP)
   d. *Your *give* the book to Bill (*BSE)

The use of *-ing* in both lexical and phrasal nominalizations can be accounted for more directly in Jackendoff's (1977) analysis, in the following way. In this system, the reason that *-ing* surfaces in both lexical and phrasal nominalizations lies in the supposition that it is the same element in both. The only difference between lexical nominals and NGPs lies in the "scope" of *-ing* as a deverbal nominalizing element. For Jackendoff (1977), various types of nominalizations are pulled together under a single *deverbalizing schema* (where X = N, for deverbal nominalizations). Lexical nominalizations result when i = 0, while NGPs (phrasal nominalization) result when i = 2:

(4) *Deverbalizing schema* (Jackendoff 1977):
$X^i \rightarrow af\ V^i$

Now, the only nominalizing affix in English that can fit this variable schema is *-ing*, as seen in (2)–(3) above.

1.2. *The morphological status of* -ing *in lexical and phrasal nominalizations*

While there appears to be no evidence contradicting the supposition that *V-ing* in lexical nominalizations is anything but a nominal, there are problems with the assumption that the *-ing* affix is a nominalizer, and that *V-ing* is a deverbal nominal, in NGPs. The reason is as follows.

In a number of languages in which phrasal nominalizations employ a dedicated nominalizing suffix, rather than some pilfered inflectional form of the verb like English and Spanish, it is straightforward to verify that the nominalized verb in phrasal nominalizations behaves morphologically as a noun. For example, the nominalized verb takes nominal inflectional

particles such as Case markers, while rejecting purely verbal inflectional affixes. This is the case in Korean.

In Korean, there is a dedicated nominalizing element (a suffix) used in phrasal nominalizations, which is also the affix found in (certain types of) lexical nominalizations (Yoon 1989; Lapointe and Nielsen 1994):

(5) *Korean phrasal nominalization*
[John-uy chayk-ul ilk-*um*-i] nolawu-n
J-GEN book-ACC read-NML-NOM surprise-V.PRENOM
sasil-i-Ø-ta
fact-be-PRS-DECL
'John's reading the book is a surprising thing.'

(6) *Korean lexical nominalization*
Cwuk-*um*-kwa sal-*m*
die-NML-CONJ live-NML
'Life and death.'

The nominalized verb in phrasal nominalizations behaves morphologically as a noun rather than a verb. Purely verbal affixes (such as tense and mood affixes) cannot be attached directly to the nominalized verb, while the full range of nominal affixes (such as Case markers and postpositions) can be:[8]

(7)	a.	*[*mek-hi-m*]-*ess-ta*	eat-PASS-NML-PST-DECL '?'	
		vs.		
	b.	[mek-hi-m]-*ulo*	eat-PASS-NML-INST	'through being eaten'
		[mek-hi-m]-*i*	eat-PASS-NML-NOM	'being eaten (subject)'
		[mek-hi-m]-*uy*	eat-PASS-NML-GEN	'being eaten (possessor)'

The nominalized verb in phrasal nominalizations is no different in this regard from the deverbal nominal in lexical nominalizations. Both reject verbal affixes and take nominal affixes:

(8)	a.	*[cwuk-um]-*ess-ta*	die-NML-PAST-DECL '?'	
		vs.		
	b.	[cwuk-um]-*ulo*	die-NML-INST	'through death'
		[cwuk-um]-*i*	die-NML-NOM	'death (subject)'
		[cwuk-um]-*uy*	die-NML-GEN	'death's (possessive)'

To the best of my knowledge, nominalized verbs behave similarly in other languages with dedicated nominalizers, such as Turkish (Kornfilt 1984) and Cuzco Quechua (Lefebvre and Muysken 1988).

In English, by contrast, while the *V-ing* form in lexical nominalization admits nominal inflectional affixes, the corresponding form in NGP does not admit nominal affixation or otherwise behave morphologically as a noun. On the contrary, there are clear indications that it remains a verb.

First, as pointed out by Pullum (1991), the *V-ing* element in NGPs disallows the nominal plural suffix *-s*, while *V-ing* in lexical nominalization allows it:

(9) a. The (frequent) singing-*s* of the Marseillaise (lexical V-ing)
vs.
b. *John's singing-*s* the Marseillaise (NGP V-ing)

Second, the NGP does not take the nonverbal negative *no* while admitting the verbal negative *not*. Lexical nominalization shows the opposite behavior:

(10) a. *No/*not* recording of the Marseillaise can compare to the thrill of a live performance (lexical V-ing).
vs.
b. John's **no/not* recording the Marseillaise was expected to cause a furor (NGP V-ing).

The morphosyntactic behavior of *V-ing* in English NGPs parallels the behavior of the "nominal infinitive" in phrasal nominalizations in Spanish, which behaves as a verb and not a noun with regard to morphological affixation.

As is well known, lexical and phrasal nominalizations are formed on the basis of the infinitive in Spanish (Plann 1981; Ojeda 1986; Yoon and Bonet-Farran 1991) and in other Romance languages. The infinitive form of the verb in phrasal nominalizations corresponding to the NGP in English[9] (i) takes verbal clitics (Ojeda 1986), and (ii) does not admit nominal plural marking (Jose Ignacio Hualde, personal communication):

(11) a. Nuestro cantar-*las* le irrita
our to-sing-them him irritates
Our singing them irritates him.
b. *Los cantar-*es* La Traviata le irrita
the.PL to-sing-PL La Traviata him irritates
*Singings La Traviata irritates him.

In contrast, the infinitive in lexical nominalizations shows fully nominal behavior, as shown by its ability to take nominal plural marking (cf. [12a]) and its rejecting verbal clitics such as *-las* (cf. [12b]):

(12) a. Tus cantar-*es*
your to-sing-PL
'Your songs'

b. *El cantar-*las* de Maria
the to-sing-them of Maria
*'Maria's songs them'

1.3. *The problem*

We seem to have driven ourselves into a difficult corner. Plainly, the fact that the same deverbal element is found in both lexical and phrasal nominalizations in a number of languages demands that we prefer an analysis of lexical and phrasal nominalizations in which this property is accounted for. However, we have seen that the most straightforward account of the generalization (such as that of Jackendoff 1977) — which is to treat the recurring element (such as *-ing*) in the two types of nominalizations as the same element — fails to predict the verbal behavior of the deverbal element in phrasal nominalizations in English and Spanish, while being substantiated by nominalizations in languages like Korean.

What we need, then, is a cross-linguistic account of deverbal nominalizations that (i) predicts that the same deverbal element will be used in lexical and phrasal nominalizations, and (ii) predicts the "surprising" verbal behavior of the deverbal element in phrasal nominalization in English and Spanish (and languages like them), while correctly capturing the nominal behavior of the deverbal element in phrasal nominalizations in Korean (and languages like it).

In the following sections, I shall provide an analysis of English and Spanish phrasal nominalizations (sections 2 and 3) that not only predicts the different morphological behavior of the deverbal element in lexical and phrasal nominalizations, but also explains why the same deverbal form is found in the two types of nominalizations. Korean nominalizations and the question of why they should behave differently are taken up in section 4.

2. The proposal: lexical and phrasal zero derivations in Spanish and English nominalizations

The key to the solution of the problem identified in the last section lies in rejecting the commonly held assumption that *-ing* functions as a

nominalizer in English, EVEN IN LEXICAL NOMINALIZATIONS. I shall come to this conclusion through a circuitous route, by first introducing a particular analysis of nominalizations in Spanish and using the consequences of this analysis to argue for the plausibility of a similar analysis of English. I argue that just as the infinitive morphology in Spanish nominalizations is not a nominalizer, the *-ing* suffix in English nominalization should not be considered a nominalizing suffix either. Instead, I argue that in both Spanish and English, verbal inflectional forms (infinitive in Spanish and present participle in English) are nominalized by a process of *zero derivation*, which can apply both lexically and syntactically, yielding lexical and phrasal nominalizations respectively.

The proposed analysis enables us to answer the questions raised in the previous section in addition to affording us an explanation for the morphological differences between languages with dedicated nominalizers (Korean, Quechua, etc.) and those without (Spanish, English), a matter I take up in greater detail in section 4.

2.1. *The nominal infinitive in Spanish and zero derivation*

In Spanish, the VFORM that is found in both lexical and phrasal nominalizations is the infinitive form (VFORM:inf). In an attempt designed in part to answer why the same VFORM occurs in both types of nominalizations, Yoon and Bonet-Farran (1991) propose that nominalizations in Spanish are formed by *morphological conversion* or *zero derivation* of the verbal projection of the infinitive.[10]

Lexical nominalizations such as *cant-ar* 'song' are taken to be derived by z(ero) derivation from the infinitive:

(13) $[\text{cant-ar}]_V \Leftarrow \text{z-derivation} \Rightarrow [[\text{cant-ar}]_V\text{-}\emptyset]_N$
to-sing song

In order to capture the fact that it is the infinitival form that also occurs when the nominalization is phrasal, they propose that while the lexical nominalization is derived by z-derivation applying at the LEXICAL (V^0) level, phrasal nominalization results when z-derivation applies to PHRASAL projections of V (V^n – VP, IP, CP) — that is, when z-derivation applies in the syntax.

Such a proposal makes sense only within a particular view of morpho-syntactic interaction, which I shall sketch briefly below. It is not the purpose of this paper to exhaustively defend this view, but to the extent that such a view enables us to offer interesting answers to the problem

at hand, the account proposed in this paper constitutes another reason to believe in the plausibility of the view that it depends on.

2.2. *An excursus on lexical vs. syntactic morphology*

The proposal made in Yoon and Bonet-Farran (1991) is embedded within a framework of assumptions about morphosyntax in which morphological combinatoric operations such as affixation, compounding, reduplication are not restricted to the DOMAIN of the lexicon but are allowed to apply in syntax to objects constructed by syntactic rules — that is, phrases.[11] This is not to be confused with a claim that denies the autonomy of morphology. There is an autonomous morphology with its own set of formatives (such as affixes, stems, etc.) and combinatoric operations. It simply claims that morphological operations are not confined to the lexicon, as would be the case under a certain interpretation of lexicalist assumptions. Rather it claims that the formatives for the morphological combinatoric operations need not be restricted to (sub)lexical entities (i.e. constituents below the BAR:0 level), but may be phrasal (BAR:1 or 2) constituents as well.

Specifically, in this framework, *affixation* (a morphological combinatoric operation), for example, can be either lexical (affixation to a word — *lexical affixation*), or syntactic (affixation to a phrase — *phrasal affixation*). Likewise, we may view the morphological combinatoric operation of *compounding* as not restricted to the lexicon. As Shibatani and Kageyama (1988) show, there are reasons to believe that compounds may be formed in the lexicon (*lexical compounds*) as well as in the syntax (*syntactic compounds*).

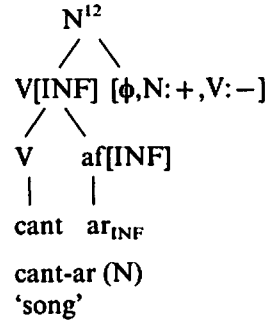
Such a view leads us to hypothesize that besides the "familiar" operations of affixation and compounding, more "exotic" morphological operations should also be distributed across the modules of lexicon and syntax. What Yoon and Bonet-Farran (1991) propose is that the operation of *morphological conversion*, or *z-derivation*, may also be lexical (conversion of a word — *lexical z-derivation*), or syntactic (conversion of a phrase — *phrasal z-derivation*). It is within this context that we may speak of phrasal z-derivation.

2.3. *An analysis of Spanish nominalizations as zero derivation*

Let us tentatively assume, largely for the sake of illustration at this point, that productive z-derivation is mediated by a null affix, following Lieber

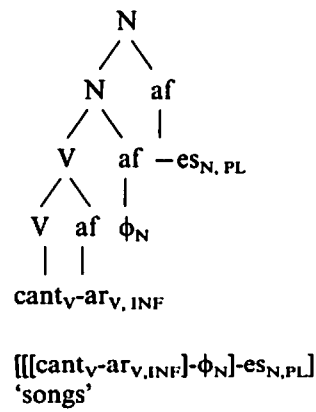
(1980, 1992). The z-derivation of the lexical nominal infinitive *cantar* 'song' can be represented as follows:

(14)



In the proposed analysis, the infinitival suffix does not function as a nominalizer. It is the verb stem plus the infinitive suffix that is z-derived to a noun. This has the consequence that even though the infinitive suffix is not itself a nominalizer, the entire z-derived word is a noun. Therefore, the analysis predicts correctly that such forms will take nominal affixes while rejecting verbal affixes.

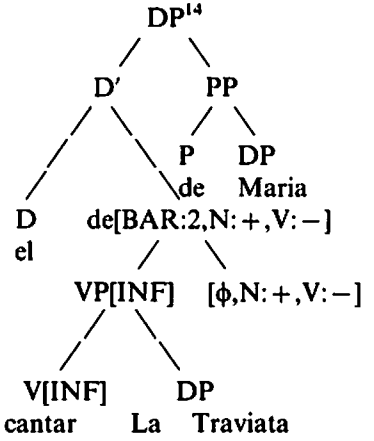
(15)



I assume, following Abney (1987), that affixes inherently lack specifications for BAR value and inherit the BAR value of elements they combine with, in accordance with feature inheritance principles (specifically, the *backup percolation* of Lieber 1992). The BAR level of the input and output of affixation will therefore be identical — in this case, zero.[13]

Phrasal nominalizations undergo phrasal z-derivation and receive the following analysis:

(16)



El cantar La Traviata de Maria
the to-sing La Traviata of Maria
'Maria's singing La Traviata'

In phrasal nominalization, it is the VP headed by the infinitive form of the verb that undergoes z-derivation, by combining with a null nominal affix. It is predicted that within the VP, everything will be thoroughly verbal. Crucially, this predicts, correctly, that nominal plural marking could not be attached to the head of the z-derived VP. Outside the nominalized VP, however, we expect to find nominal properties, such as Case marking of dependents by the preposition *de* 'of'.

The view of morphology–syntax interaction adopted in this paper naturally gives us three classes of affixes — (i) affixes that are strictly lexical, (ii) affixes that can be both lexical and syntactic, and (iii) affixes that are always syntactic. The differences among the three can be succinctly characterized as follows.

The first type (lexical) of affix restricts the BAR level of its host (complement) to zero ($n = 0$), while the second type (lexical and syntactic) allows its complement to have a range of BAR levels, $0 \leq n \leq 2$. The third type, such as clitics, or affixes that are always syntactic, combines with hosts with phrase-level BAR values only ($n = 2$).[15] In all cases, however, since affixes lack the BAR attribute, the BAR level of the host will be inherited by the constituent that results from the affixation.

The zero affix involved in nominalizations in Spanish is an example of the second type of affix (lexical and phrasal). The affix (which we represented as a suffix, as a matter of convenience) is subcategorized for various types (i.e. BAR levels) of verbal projections as long as they are specified with INF value (which is inherited from the head of the projection) and yield a nominal projection with identical BAR levels. We may thus represent the subcategorization of this affix as follows:

(17) $\emptyset$: $[V^{n}_{INF}$ ——— $]_{N^{n}}$

When n = 0, lexical nominalizations result. When n = 2, various types of phrasal nominalizations result.[16] However, given that VFORM:INF is inherited from the lexical head of the verbal projection, it follows that the same form of the verb will be found in both lexical and phrasal nominalizations. The lexical head of a phrasally z-derived projection remains FULLY VERBAL, as the morphological evidence demands. This is so since the sister constituent of the zero affix is fully verbal internally. It is only externally that it has nominal properties.

In sum, the analysis presented above is able to capture the generalization that the same VFORM is used in both lexical and phrasal nominalizations, and at the same time to explain the morphological differences between the lexical heads of phrasal and lexical nominalizations.

2.4. *English NGPs as zero derivation*

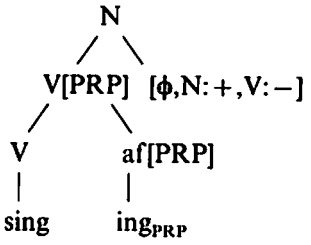
I am suggesting that the same holds for English. I propose that *-ing* never functions as a deverbal nominalizing affix. I claim instead that the present participle form of the verb (VFORM:prp) undergoes z-derivation, either lexically (yielding lexical nominalizations) or phrasally (yielding NGPs and other gerunds). Assuming again that z-derivation employs a zero affix, the affix leaves the BAR value of its host underdetermined. Unlike Spanish, however, the affix requires its host to be a verbal projection with VFORM:prp specification. We may state the subcategorization of the null affix in the following way:[17]

(18) $\emptyset$: $[V^{n}_{PRP}$ ——— $]_{N^{n}}$

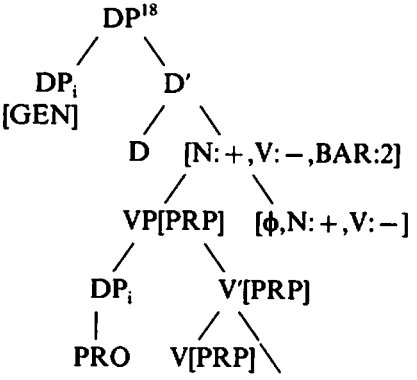
The analysis of lexical and phrasal nominalizations (NGPs) in English is straightforward, given this information. Lexical nominalizations will be

analyzed as in (19a), while phrasal nominalizations (NGPs) will be analyzed as in (19b):

(19) a.



b.



As in Spanish, despite the fact that *-ing* itself does not function as a deverbalizing affix, the entire z-derived word in the lexical nominalization shown in (19a) is a noun. Therefore, it is predicted that it should take nominal affixes and reject verbal affixes. In the phrasal nominalizations shown in (19b), on the other hand, the head of the VP constituent that is sister to the null affix remains fully verbal. As such, it will reject any nominal affixes.

In addition, the fact that the same VFORM occurs in both lexical and phrasal nominalizations is accounted for by letting the zero affix have variable subcategorization.

As to additional details of the syntax of NGP, I assume that the GEN DP is base-generated in SpDP, controlling a PRO in the SpVP (see note 23 for relevant discussion). The SpVP can only be PRO since there is no finite INFL within the VP. It is correctly predicted that nominal properties will be found only at the highest level of NGP (Lapointe 1993a).

2.5. *Comparison with Abney (1987)*

Of the existing analyses of NGPs, the one that is closest to my analysis is Abney (1987). In my analysis, I have drawn on several elements of his work. However, the present analysis differs from his both in its empirical claims and also in the theoretical and analytic devices that it takes to be responsible for the morphosyntax of phrasal nominalizations.

The points of similarity between the text analysis and Abney (1987) are as follows. First, both analyses share the intuition that what is happening in NGPs is that a phrasal projection of the verb is being nominalized (with a null affix, which Abney designates ING). Second, both analyses assume that *-ing* is lexically affixed to V in NGPs (at least all the way "through" S-structure), rather than *-ing* dropping to V via affix hopping (Baker 1985) or the V raising to meet V by head raising (Milsark 1988).

However, there are important differences as well. First, Abney suggests that there is raising of the *V-ing* head of the VP to the position occupied by the null affix AT LF, in a manner foreshadowing the checking theoretic analyses of verbal inflection of minimalist syntax (Chomsky 1992).[19] On the other hand, I assume no such raising.

Assuming with Grimshaw (1991) that head movement is confined to an extended projection, there can be no raising of V to the null affixal head because the null affix involved in z-derivation is not a functional head associated with the projection containing *V-ing*. In other words, the two do not form an extended projection, because the latter is fully verbal while the former is nominal.

Second, Abney remains unclear on the morphological status of *V-ing* in overt syntax (i.e. at DS and SS). As stated in the previous paragraph, under checking theoretic assumptions, for verbs to raise at LF to functional heads, they must possess features that match the functional head. Now, if the null affix that Abney posits is a nominal element, as he assumes it is, we expect that *V-ing* will show nominal properties in overt syntax "before" LF-raising. However, the evidence we have seen indicates that it does not.

Third, the motivation for the null affix is unclear in Abney's work. In contrast, I provide a grounding for the null affix. It is a concomitant of phrasal z-derivation.

2.6. *Summary*

Let me now summarize the argument. I have argued that once we drop the commonly held assumption that *-ing* is a deverbal nominalizing

element, an analysis that meets the twin demands of (i) accounting for the occurrence of *-ing* in both lexical and phrasal nominalizations, and (ii) explicating the different morphological behavior of *V-ing* forms in lexical and phrasal nominalizations in English (and Spanish) can be provided. The analysis was embedded within a theory of morphosyntactic interaction in which certain affixes are assumed to combine with either lexical or phrasal hosts.

In the next section, I turn to certain conceptual and technical questions that the analysis raises, before embarking on an analysis of phrasal and lexical nominalizations in Korean, where nominalized verbs behave as nouns in both types of nominalizations.

3. Further issues

3.1. *Do inflected forms undergo z-derivation?*

The analysis proposed in section 2 assumes that a verb root affixed with inflectional suffixes (such as the present participle suffix) undergoes z-derivation, which is a variety of derivational (category-changing) morphology. This goes against the idea that derivation should "precede" inflectional affixation in word formation.

However, the "mixing" of derivation and inflection is often found in natural languages. We do not have to venture far to find the relevant data. Phrasal nominalizations in Korean (see sections 1.2 and 4) constitute the relevant examples. In phrasal nominalizations, affixes that are derivational, such as the nominalizing suffix *-um* (see [20a]), may be attached to the inflected form of the verb. A similar situation arises with the derivational denominal copulative affix *-i* (see [20b]), which attaches to inflected forms of nominals:

(20) a. [John-i pap-ul mek-ess]-*um*-i punmyengha-ta
J-NOM meal-ACC eat-PST-NML-NOM evident-DECL
'It is evident that John ate.'

b. John-i calmos-ha-n kes-un
J-NOM mistake-do-V.ADNOM thing-TOP
[sicak-puthe]-*i*-ess-ta
beginning-from-COP-DECL
'It was from the beginning that John made mistakes.'

More relevant to our concerns is the fact that there are z-derivations that clearly involve inflected forms. Lieber (1980: 144ff.) mentions that in

Latin, the supine form (deverbal noun) is regularly z-derived from the participle stem of the verb, which is an inflected form of the verb:

(21) (Lieber 1980: 144)

Infinitive	*Participle (V)*	*Supine (N)*
sedeo:	sessum	sessum
admoneo:	admonitum	admonitum

Even in English, we find plausible instances of z-derivation of inflected forms outside of lexical nominalizations and NGPs. Following the insight of Lapointe (1993a), we might take the participial phrase (both PSP and PRP forms) to undergo z-derivation from V to A:[20]

(22) a. John was beat-en(V) by the sailors.
a'. The beat-en(A) path
b. The boy was sing-ing(V).
b'. The sing-ing(A) nun

In sum, I find no principled reason against positing z-derivation for *V-ing* forms in English (*ceteris paribus*, for the infinitival form of verbs in Spanish).

3.2. *Does z-derivation employ null affixes?*

I have assumed that z-derivation employs null affixes, if only for reasons of graphic perspicuity in representations and historical precedents (such as Lieber 1980, 1992). At the least, there seems to be no definite evidence against positing a null affix in Spanish and English nominalizations.

According to Lieber (1980, 1992), there are positive reasons not to posit zero affixes in certain types of unproductive z-derivations, but no principled reason against doing so when z-derivation is systematic and gives a unique output. As is easy to see, the proposed $V_{PRP} \Leftrightarrow N$ z-derivation falls in the latter (productive) class.

However, Pullum (1991) argues that any analysis of NGPs that posits a nominal head is inadequate, since he finds positive evidence against a nominal head in NGPs. Therefore, I need to evaluate whether the proposal that there is a null affix in z-derivation can be sustained in light of Pullum's criticisms. This is what I do in the next section.

3.3. *The lack of nominal heads in NGPs*

Pullum (1991), in arguing for an analysis where the nominal properties of NGPs are not inherited from a nominal element but by a stipulated

mismatch of major category values in ID rules, argues that certain aspects of the behavior of NGPs positively argue against positing a nominal head in NGPs. These are the following:

(23) (i) Restrictive relatives are not allowed in NGPs.
(*[[John's singing the song] *that I like*])
(ii) Adjectives are not allowed in NGPs.
(*?John's *constant* singing the song)
(iii) *One* anaphora is not allowed in NGPs.
(*John's singing the song was worse than Bill's *one*.)
(iv) Determiners/demonstratives are not allowed in NGPs.
(**The/that* singing the song was as bad as the recording.)
(v) NGPs do not occur in prenominal GEN contexts.
(*[John's singing the song]-*'s* effect on his audience)

Pullum argues that if the NGP has a nominal head, it ought to project to the N′ level. This in turn predicts that elements that are standardly taken to combine with (or substitute for) N′, such as restrictive relatives ([23i]), prenominal adjectives ([23ii]), *one* anaphor ([23iii]), and determiners/demonstratives ([23iv]), should be found in NGPs. However, this is not the case. Pullum takes this result to be evidence against positing an N′ in NGPs.[21]

(23v), in turn, is taken to constitute evidence against N^0 in NGPs. Pullum accounts for the impossibility of NGPs in prenominal GEN positions by hypothesizing that elements that occur before the possessive clitic must not only be NPs, but also be headed by a lexical noun:

(24) a. *The richer's duty is to help the poor (= $[_{NP}$ the richer $[e]_N]$)
b. *Some's answers were inadequate (= $[_{NP}$ some $[e]_N]$)

If *-ing* is the head of NGP, one predicts incorrectly that NGPs should be able to occur before a possessive clitic.

It turns out, however, that the analysis of NGPs in this paper is fully consistent with (23i)–(23v), even though I posit a nominal head. This is so for the following reasons. Recall that I suggested, following Abney (1987), that an affix lacks BAR levels and directly inherits the BAR value of its host. This has the consequence that in NGPs, there is a VP and NP, but no N′. Since there is no N′, (23i)–(23v) naturally follow.

(23v), on the other hand, is not an argument against the existence of a nominal head per se but one against considering the *-ing* element to be the head of the NGP. Recall that the nominal head of the NGP we posit is necessarily null. Therefore, it is not at all surprising

that this head should pattern with other phonologically null nominal heads.[22]

In the next section, we turn to the final element of the cross-linguistic account of phrasal nominalizations — the question of why the deverbal element in both lexical and phrasal nominalizations in Korean (and languages like it) behaves morphologically as a noun.

4. Lexical and phrasal nominalizations in Korean

4.1. *Korean nominalizations and phrasal suffixes*

In section 1.2, we saw that in Korean the nominalized verb in both lexical and phrasal nominalizations behaves morphologically as a nominal, accepting nominal inflectional affixes while rejecting verbal affixes, in contrast to English and Spanish. In this section, I provide an account of the difference between the two groups of languages.

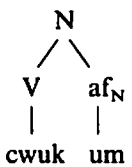
Yoon (1989) analyzes lexical and phrasal nominalizations in Korean as resulting from either lexical or phrasal affixation of the deverbal nominalizing suffix *-(u)m*. There are several types of phrasal nominalizations in Korean, but for comparative purposes, we shall restrict our discussion to the type directly comparable in its syntactic properties to NGPs in English, one that shows mixed nominal and verbal properties (GEN subjects and ACC objects). Yoon (1989) calls this construction *type III* nominalization.

In accordance with earlier assumptions, I suggest the following subcategorization of the nominalizing suffix in Korean:

(25) -um: $[V^n \_\_\_\_]_{N^n}$

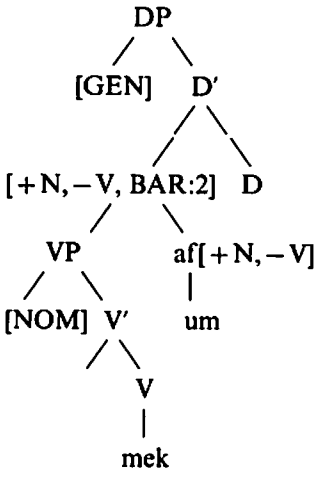
Lexical nominalizations such as *cwuk-um* 'die-NML', 'death' result when the affix combines with a zero-level projection of V:

(26)



A phrasal nominalization such as type III nominalization can be analyzed as follows:

(27)



John-uy pap-ul mek-um
J-GEN meal-ACC eat-NML
'John's eating the meal.'

Accepting the conclusion of Lapointe and Nielsen (1994) that tense inflection is generally impossible in type III nominalizations, let us assume that the nominalizing affix combines with a VP and not IP (contra Yoon 1989).

Korean differs from English in 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 nominalization). If it moves to SpDP[23], it will be assigned GEN, yielding type III nominalizations.

The question we seek to answer now is how, given this analysis, nominal inflectional suffixes such as Case markers and postpositions can attach to the nominalized verb in both lexical and phrasal nominalizations.

The crucial property of Korean that allows nominal inflectional affixes to be attached to the deverbal element in phrasal nominalizations is the fact that nominal inflectional affixes are themselves phrasal suffixes in Korean, always combining with phrases, while they appear morphologically as suffixes on the final element of the phrase they combine with, which happens to be the syntactic head of the phrase given the strict head-finality of Korean syntax.

For example, the subcategorization of NOM case marker *-i/ka* may be stated as in (28). Being a phrase-final suffix, NOM case marker specifies

that the host of affixation is a phrasal category (BAR:2). As a nominal suffix, it may attach to a nominal category:[24]

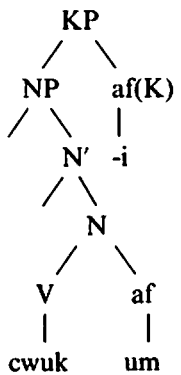
(28) -i/ka: [[+N, BAR:2] ____]$_{N^2}$

Since the phrasal nominalization in (27) satisfies the subcategorization requirement of the NOM case affix, nothing precludes the latter from attaching to the nominalized phrase:

(29) [John-uy pap-ul mek-um]-*i* (nolap-ta)
J-GEN meal-ACC eat-NML-NOM (surprising-DECL)
'John's eating the meal is surprising.'

In lexical nominalizations, while NOM case is attached phonologically to the nominalized verb, syntactically it is attached to the NP/DP headed by the nominal, being a phrasal (phrase-final) suffix:[25]

(30)



Cwuk-um-i (kos o-n-ta)
die-NML-NOM (soon come-PRS-DECL)
'Death comes soon.'

In sum, the head-finality of NPs in Korean (and languages like Turkish and Quechua) and the phrase-suffixal character of Case markers enable Case markers to attach to the deverbal nominal heads in both lexical and phrasal nominalizations.

4.2. *Why English is unlike Korean*

Let us now compare Korean and English. It is clear that the nominal plural suffix in English is not a phrasal (phrase-final) suffix, as can be seen by its failure to suffix to NP in (31a). Instead, it is a lexical suffix

that occurs on the nominal head of the NP/DP that it pluralizes (cf. [31b]):

(31) a. *[The boy from Iceland]$_{NP}$-$s_{N.PL}$ are here
b. [The boy$_N$-$s_{N.PL}$ from Iceland] are here

The morphological subcategorization of *-s* should thus be as follows:

(32) -$s_{N.PL}$: [N^0 ____]$_{N^0}$

Now, in the structure for NGPs I have proposed, *V-ing* is the verbal head of a nominalized (z-derived) phrase. Crucially, there is no nominal head internal to the VP for the suffix *-s* to attach to. Therefore, we predict correctly that (33) is ungrammatical:

(33) *John's [[sing-ing$_V$-$s_{N.PL}$ the song]-$\emptyset_N$]$_{NP}$

It will not be able to attach to the entire NGP either, being a lexical affix. Only phrasal suffixes occur in combination with phrasal hosts. This rules out (34):

(34) *John's [[singing the song]-$\emptyset_N$]$_{NP}$-$s_{N.PL}$ were terrible.

What about the null nominal affix involved in z-derivation? Even though the null affix is a nominal element, it certainly cannot serve as a morphological host for the suffixation of the nominal plural suffix -$s_{N.PL}$, being phonologically null (besides being an affix itself). It is not unreasonable to assume that a bound affix cannot be supported by a phonologically null (affixal) host. On the other hand, morphological ADJACENCY would prohibit -$s_{N.PL}$ from taking a more deeply embedded nominal ('song' below) as its host, when it functions to pluralize the NGP:[26]

(35) *John's [[singing the *song*$_N$]-$\emptyset_N$]-$s_{N.PL}$ were terrible.
*adjacency

Of course, the impossibility of affixing -$s_{N.PL}$ to the NGP phrase would also be predicted if z-derivation did not employ null affixes.

5. Conclusion

In this paper I have proposed an analysis of NGPs in English based on the idea that the morphological operation of zero derivation is available both lexically and syntactically. The analysis proposed in the paper has the advantage of being able to explain (i) why the same verbal form occurs in both lexical and phrasal nominalizations in a number of lan-

guages, and (ii) why the verbal element in lexical nominalizations behaves as a noun while its counterpart in phrasal nominalizations behaves as a verb in languages like English and Spanish.

An account of the morphosyntactic difference between the English-Spanish type languages and languages like Korean with dedicated nominalizers was also provided, which relies crucially on the assumption that affixes sometimes combine with phrasal hosts, a possibility that is explicitly rejected under certain interpretations of lexicalism. However, to the extent that the proposal in this paper succeeds in providing explanatory answers to certain recurring cross-linguistic generalizations, we may consider the results of this paper as constituting a reason to doubt the correctness of the lexicalist position.

The issue of whether morphological conversion involves null affixes has not received any positive resolution even as its domain has been extended to syntax. I have left open the exact characterization of productive zero derivations, showing that on either approach (zero affixation or not), the range of facts about nominalizations discussed in this article can be accommodated. Perhaps additional data can shed light on the resolution of this question.

Received 8 April 1995
Revised version received
23 October 1995

University of Illinois

Notes

* Thanks are due to Jose Ignacio Hualde for help with the Spanish data and to Elabbas Benmamoun for comments on an earlier draft. Georgia Green deserves special acknowledgement for detailed comments that led to improvements in content and organization. The comments and suggestions of two anonymous referees for this journal also proved indispensable in the revision process. Correspondence address: Department of Linguistics, University of Illinois, 4088 FLB, Urbana, IL 61801, USA. E-mail: jyoon@uiuc.edu.

1. Specifically, since what seems to be nominalized is a phrase (VP) rather than a lexical head, one would need to allow *-ing* to combine with VP syntactically and posit a mechanism that puts *-ing* and V together morphologically. Baker (1985), Abney (1987), and Milsark (1988) propose various ways of doing this, while Pullum (1991) and Lapointe (1993b) offer criticisms of these approaches.
2. One may ask whether the N-over-V structure that results from (1) violates X-bar theory. The answer seems to be negative, for the following reason. If the normal sharing of major categorial features along head paths is a reflex of endocentricity (headedness), and if the latter is the crucial intuition that X-bar theory attempts to capture (Kornai and Pullum 1990), Pullum's analysis does not violate X-bar theory, since, although NGPs in his view do not share major category features along head

paths (through a stipulated mismatch in the licensing ID rule), they nevertheless share other head features.

3. The abbreviations for VFORM values in English employed in this paper are based on GKPS (1985).
4. I am not claiming that this generalization holds for every language. What I AM claiming is that, given that such a generalization holds in a number of typologically unrelated languages (English, Spanish, Korean, Quechua, etc.), it is unlikely that the generalization is accidental.
5. Lapointe sketches a theory of categories in which DLCs are situated within a version of GPSG and demonstrates that there may be other types of mixed categories. As is clear, a DLC such as ⟨N|V⟩ has the right mix of properties to characterize the syntax of NGPs.
6. Lapointe (1993a) in fact provides no explicit derivation of this generalization. However, the proposal sketched in below would be a natural way to do that within a framework like his.

   However, Lapointe's analysis, since it deems *-ing* a nominalizing element, predicts wrongly that nominal affixes should be attached to *V-ing* in NGPs, unless DLCs are differentiated from "normal" nominals in some way.
7. The BASE form of verbs is sometimes converted via zero derivation to a nominal:

   (i) look (V) ↔ look (N)
   cook (V) ↔ cook (N)

   However, this derivation is highly restricted, in contrast to the productive strategy of forming lexical deverbal nominals by *-ing*.
8. In order to host verbal affixes, the nominalized verb must first be denominalized with a verbal stem such as the copula *-i-*. Such behavior argues against the supposition that the nominalized verb is a category neutral between N or V, or a category that is either N or V, as suggested in DiSciullo and Williams (1987).
9. Since Spanish does not have prenominal possessives, this would be the nominalization in which the object of the infinitive is marked verbally while the subject is marked in a manner typical of nominal dependents, i.e. by the preposition *de* 'of'.
10. The alternative would be to assume that the infinitive ending serves (optionally) as a deverbal nominalizing suffix in Spanish, as is implied by the traditional dichotomy of "nominal" vs. "verbal" infinitive. Among other things, this approach does not explain why nominal affixes cannot be attached to the "nominal" infinitive in phrasal nominalizations (Ojeda 1986, and examples in the previous section).
11. Dowty (1979), Sugioka (1984), and Yoon (1989) propose such models. Similar frameworks include Borer's (1988) parallel morphology, the work of Baker (1985), Shibatani and Kageyama (1988), and Sadock's (1990) autolexical syntax.
12. The top node is an abbreviation for (at least) {⟨N, +⟩, ⟨V, −⟩, ⟨BAR,0⟩}. While the general framework of the paper is that of GB, I borrow liberally from the GPSG theory of categories.

    The feature specification of the null suffix is intended as an abbreviation for a lexical entry (with semantics omitted) conceived of as a triple, consisting of feature–value pairs in three sets — phonological, syntactic/formal, and semantic feature sets, ⟨{P}, {F}, {S}⟩. The phonology of the affix is null (i.e. {⟨PHON,∅⟩}), while its syntax feature complex consists solely of the specification {⟨N, +⟩, ⟨V, −⟩}, without the BAR attribute. I assume, as discussed in the text later, that affixes are not specified for BAR.

    The usual assumptions about feature inheritance in morphology (Lieber 1980, 1992)

are that (i) features on the head percolate to the mother node when in conflict with that of the nonhead (*head percolation*, Lieber 1992), and that (ii) nonconflicting features on the nonhead percolate (*backup percolation*).

The technical question is whether the ⟨VFORM:inf⟩ specification should percolate to the mother node in (14). It would if it does not conflict with features on the mother. However, FCRs might ban INF in the mother node if VFORM values are constrained to cooccur with verbal categories only (GKPS 1985). It is not clear that such a restriction is justified, especially in light of deverbal nominalizations of the sort studied here.

13. (Negative) BAR levels have been employed in morphology to express sub-word-level morphological distinctions such as root vs. stem, or to express "position classes" in inflectional morphology (Selkirk 1982). I do not adopt this practice in this paper. This should not be a problem since BAR level is not the only way to express such distinctions.
14. The mother node dominating the null affix and its complement VP is at least {⟨N, +⟩, ⟨V, −⟩⟨BAR,2⟩}, that is, it is a phrasal nominal category. Whether or not INF can also be instantiated on this node depends on the resolution of the question mentioned in note 12. For this reason, I have chosen an underspecified representation for this node.

    I have assumed that such a phrase is complement to a D, whose feature specification I take to be {⟨N:+⟩, ⟨V:−⟩}, following the extended projection theory of Grimshaw (1991). I have done so largely to account for the nominally marked dependents that the phrase combines with. However, nothing crucial hinges on the choice of the DP representation. All that is required is that the nominalized phrase have nominal properties, so that the dependents that it combines with are marked as nominal (vs. verbal) dependents. The considerations in this note carry over to the analysis of NGPs in English presented subsequently.
15. Nonclitic phrasal affixes include Case markers in many languages including Japanese, Korean, Turkish, and Quechua, as well as verbal affixes in Korean, according to the analysis of Yoon (1994a, 1994b).
16. Yoon and Bonet-Farran (1991) propose that IP and CP can also be nominalized in Spanish. This would follow on the assumption that they form extended projections (Grimshaw 1991) of the verb.
17. If IP is an extended projection of VP in the sense of Grimshaw (1991), this predicts that IP should also undergo phrasal z-derivation. This seems to be the right thing to say about ACC-ing gerunds if these involve nominalization at the IP-level (Abney 1987).

    In Grimshaw's (1991) theory, CP is also taken to be an extended projection of VP, so the theory here predicts that CPs should also undergo z-derivation as long as they can be headed by VFORM:prp.

    Notice that CPs with lexical complementizers (*that*, *if*, etc.) can never satisfy this requirement, since such CPs are not headed by verbs, but by the complementizers. The only CPs that can meet this requirement must have null Comps and in turn dominate IP/VP headed by a VFORM:prp verb. In the view of structure projection developed in Grimshaw (1993), such CPs come out to be equivalent to IPs. This would explain why there appears to be no such nominalized CP in English.

    In contrast, both CPs and IPs can be z-derived in Spanish, because the two are not equivalent. Yoon and Bonet-Farran (1991) argue that with V-initial order what is nominalized is a CP, while with subject-first order, an IP is nominalized. One must

ensure, in a system like Grimshaw (1993), that the relevant constraints allow for this difference between Spanish and English.

18. A detail that is left unaccounted for is why determiners are possible in the phrasal nominalization corresponding to NGP in Spanish (cf. [16]), but not in English, as pointed out by a reviewer:

    (i) *John's the singing the song
    (ii) *the singing the song (cf. *PRO the singing the song)

    This problem arises from the assumption that a DP dominates the nominalized VP. While one may seek to resolve the difficulty by doing away with the DP analysis (in light of the data discussed in section 3.3), there seems to be a way to account for these facts even under the assumption that DP is projected.

    Abney (1987) proposes that when SpDP is filled (by 'John's' in [i], and by 'PRO' in [ii], under the assumption, shown in parentheses above, that the latter is an example of a PRO-ing gerund), the D head cannot be filled by lexical determiners like 'the', but only by a phonologically null, nominal 'Agr'. Let us assume that an explanation along such a line is responsible for the complementarity of an overt Det and SpDP in phrasal nominalizations in English. As is obvious, this analysis is an extension into the DP system of the 'doubly filled Comp' restriction at the CP level, which rules out strings like *'Who that left the house?'. We assume then that such a restriction does not hold in Spanish, allowing DPs to be filled by a lexical head even when SpDP is occupied.

19. In fact, Chomsky is credited with suggestions leading to the analysis he proposes.

20. Lapointe (1993a) analyzes these as yet another DLC, ⟨A|V⟩, arguing that such phrases have the internal syntax of verb phrases but the external distribution of adjective phrases. This is so since they occur in postnominal modifier position, in prenominal modifier position without complements, as absolutive modifiers, and (marginally for some) as predicative phrases.

    A reviewer points out, however, that the participial forms fail to combine with degree modifiers ('so', 'very', 'too'), which is considered a usual test for adjectives. Neither do most participial forms allow comparative and superlative affixation, usually considered a morphological test for adjective status (for mono/disyllabic adjectives). This seems to cast doubt on the conclusion that the participials are zero-derived into adjectives:

    (i) a. *a very singing nun
        b. *a so singing nun
        c. *a too singing nun (to make a suitable abbess)
        d. *the singing-est nun (in the group was Mary)

    In response to this, I would like to point out, taking a cue from Lapointe (1993a), that degree words are felicitous only with adjectives that denote gradable qualities. Thus, adjectives like 'utter', 'ultimate', etc., disallow degree words. The same is true for comparative-superlative affixation.

    (ii) a. *a so/very/too utter shock
         b. *?a so/very/too ultimate decision
         c. *an utter-er shock
         d. *?the utter-est failure

    The problem with the examples in (i) is that the participial form 'singing' does not denote a quality that is gradable.

    When the participial forms do denote gradable qualities, they combine with degree words and appear to admit comparative and superlative affixation as well under certain circumstances:

(iii) a. ?His was indeed a very swinging band.
b. ?He was in too swinging a mood (to ...)
c. The swingingest songs there could ever be
(from "A Quarter to Three," by Gary U.S. Bonds, provided by a reviewer)

21. Of course, since the NGP as a whole is an NP, both my analysis and Pullum's predict that NGP should be able to combine with nonrestrictive relative clauses, which attach to NPs:

(i) [John's constantly singing the aria], which turns everyone upside down, has got to stop.

22. There are in fact NPs that are headed by a lexical noun but are prevented from occurring before a possessive clitic:

(i) a. *[John's rejection of the plan]'s disruption of the board meeting could have been avoided.
b. *[Here]'s being the best place to stop and rest would be contested by many.

Given this, the reason for the failure of an NP to surface before the clitic cannot be due solely to its having a phonologically null head. However, this does not affect the argument, as long as there are no examples of NPs headed by null nouns that can occur in this position.

23. This is so under the assumption that there is a null D heading a DP positioned above the nominalized VP and that the D head is responsible for assigning GEN to SpDP, as shown in (27).

However, it might very well be that the nominal functional category D is missing altogether in Korean, since there is no good candidate in the nominal morphosyntax for a D head (while there is a good candidate for a Case head, as we shall see). In this case, GEN case would result when the subject DP moves and adjoins to the nominalized phrase, assuming that the adjunct-to-NP position licenses GEN case. As with English, the commitment to a DP analysis is not critical. All that is required is that the GEN-marked nominal be in a domain where nominal (as opposed to verbal) Case marking is available.

Another possibility is that the GEN nominal is base-generated outside the VP (in SpDP), controlling a null subject in the lower SpVP, as was suggested for English NGPs earlier. The control analysis seems right for English, given the impossibility of having expletives ('there', 'it'), idiom chunks, and raised DPs in NGPs:

(i) a. *there's being a spy in the closet
b. *it's being obvious that Bill is a spy
c. *the cat's being out of the bag (on the idiomatic reading)
d. *John's seeming [to be the right person for the job]

However, the relevant evidence is hard to come by for Korean, since it lacks expletives and the evidence from sentential idioms is indecisive:

(ii) ?hanul-uy mwuneci-m-ul tanghay-ss-ta
sky-GEN fall-NML-ACC suffer-PST-DECL
'(somebody experienced) the sky's falling' (= a great disaster)

24. Certain Case markers (NOM and ACC) may attach to verbal complements in some situations, so that being a nominal is not a necessary condition for Case-marker attachment. However, this does not effect our argument here, since nominality by itself is sufficient to allow Case marker affixation.

25. In (30), I treat Case markers as instances of the nominal (i.e. +N, −V) functional category K(ase) combining with an NP complement. If noun phrases in Korean project to DPs, as suggested in (27), the complement of K would have to be a DP. However, as suggested in note 23, Korean may lack DPs altogether.
26. Adjacency violations have been noted in the literature, especially with phrasal affixes (and clitics). Sadock (1990) allows violations of adjacency (his *constructional integrity constraint*) systematically for phrasal affixes. Given this, what I am claiming is simply that the nominal plural suffix in English, being a lexical suffix, cannot violate adjacency.

References

Abney, Steven (1987). The English noun phrase in its sentential aspect. Unpublished doctoral dissertation, MIT.

Baker, Mark (1985). Syntactic affixation and English gerunds. In *Proceedings of the West Coast Conference on Linguistics*, vol. 4, 1–11. Stanford: Stanford Linguistics Association.

Borer, Hagit (1988). On the morphological parallelism between compounds and constructs. *Yearbook of Morphology* 1, 45–66.

Chomsky, Noam (1992). *A Minimalist Program for Linguistic Theory*. MIT Occasional Papers in Linguistics 1. Cambridge, MA: MIT Working Papers in Linguistics.

—(1994). *Bare Phrase Structure*. MIT Occasional Papers in Linguistics 5. Cambridge, MA: MIT Working Papers in Linguistics.

DiSciullo, Anna-Marie; and Williams, Edwin (1987). *On the Definition of Word*. Cambridge, MA: MIT Press.

Dowty, David (1979). *Word Meaning and Montague Grammar*. Dordrecht: Reidel.

Gazdar, Gerald; Klein, Ewan; Pullum, Geoffrey; and Sag, Ivan (1985). *Generalized Phrase Structure Grammar*. Cambridge, MA: Harvard University Press.

Grimshaw, Jane (1991). Extended projections. Unpublished manuscript, Brandeis University.

—(1993). *Minimal Projection, Heads, and Optimality*. RuCCS Technical Report 4. New Brunswick, NJ: Center for Cognitive Science, Rutgers University. (Revised version to appear in *Linguistic Inquiry*.)

Jackendoff, Ray (1977). *X-Bar Syntax*. Cambridge, MA: MIT Press.

Kornai, András; and Pullum, Geoffrey (1990). The X-bar theory of phrase structure. *Language* 66, 24–50.

Kornfilt, Jaklin (1984). Case-marking, agreement, and empty categories in Turkish. Unpublished doctoral dissertation, Harvard University.

Lapointe, Steve (1993a). Dual lexical categories and the syntax of mixed category phrases. In *Proceedings of the Eastern States Conference on Linguistics*, 199–210. Cornell Working Papers in Linguistics. Ithaca, NY: Cornell University.

—(1993b). Constraints on the morphological forms of gerundive nominalizations. Paper presented at the annual meeting of the Linguistic Society of America.

—; and Nielsen, Sarah (1994). A reconsideration of Type III gerunds in Korean. Paper presented at the Fifth Japanese/Korean Conference, USC.

Lefebvre, Claire; and Muysken, Pieter (1988). *Mixed Categories: Nominalizations in Quechua*. Dordrecht: Kluwer.

Lieber, Rochelle (1980). On the organization of the lexicon. Unpublished doctoral dissertation, MIT. (Published by the Indiana University Linguistics Club, Bloomington.)

—(1992). *Deconstructing Morphology*. Chicago: University of Chicago Press.

Milsark, Gary (1988). Singl *-ing*. *Linguistic Inquiry* 19, 611–634.
Ojeda, Almerindo (1986). The ambivalence of Spanish infinitives. Talk given at the University of Illinois, Urbana-Champaign.
Plann, Susan (1981). The two *el* + infinitive constructions in Spanish. *Linguistic Analysis* 7, 203–240.
Pullum, Geoffrey (1991). English nominal gerund phrases as noun phrases with verb-phrase heads. *Linguistics* 29, 763–799.
Sadock, Jerrold (1990). *Autolexical Syntax*. Chicago: University of Chicago Press.
Schachter, Paul (1976). A non-transformational analysis of gerundive nominals in English. *Linguistic Inquiry* 7, 205–241.
Selkirk, Elizabeth (1982). *Syntax of Words*. Cambridge, MA: MIT Press.
Shibatani, Masayoshi; and Kageyama, Taro (1988). Word formation in a modular theory of grammar. *Language* 64, 451–484.
Sugioka, Yoko (1984). Interaction of derivational morphology and syntax in Japanese and English. Unpublished doctoral dissertation, University of Chicago.
Yoon, James Hye Suk (1989). Korean nominalizations, lexicalism, and morphosyntactic interface. Paper presented at the annual meeting of the Linguistic Society of America.
—(1994a). Korean verbal inflection and checking theory. In *The Morphology-Syntax Connection*, Heidi Harley and Colin Philips (eds.), 251–270. Cambridge, MA: MIT Working Papers in Linguistics.
—(1994b). Lexical integrity and the morphosyntax of verbal inflection in Korean coordination. Unpublished manuscript, Department of Linguistics, University of Illinois, Urbana-Champaign.
—; and Bonet-Farran, Neus (1991). The ambivalent nature of Spanish infinitives. In *New Analyses in Romance Linguistics*, Dieter Wanner and Douglas Kibbee (eds.), 353–370. Amsterdam: Benjamins.