Gerundive Complements in English: A Constraint-Based Analysis

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Abstract

Much attention has been paid to English verbal gerunds in generative grammar, but most of the studies dealt with the abstract 'functional' category 'Infl', empty categories, derivational deep structure analyses, and things like that, which all ignored the Lexical Integrity Prniciple in the sense of Pollard and Sag (1994), Sag and Wasow (1999), Bresnan and Mchombo (1995), and Sells (1995). Only recently, Malouf (2000) has presented a nonderivational, constraint-based lexicalist approach to verbal gerunds, in which he has provided a theory of mixed categories, proposing a new lexical category *gerund* in a multiple inheritance type hierarchy. And yet there are still some big gaps to be filled in the area of verb complementation involving verbal gerunds, what I call verbal complements. This paper is primarily an attempt to fill the gaps, and also an examination of the new category *gerund*.

1 Introduction

A gerundive complement is a gerund phrase used in verb complementation constructions. The underlined part in a sentence like (1) below is a typical example:

(1)   I hate Pat's/Pat smoking cigars.

Depending on the case of the NP preceding the verbal gerund, it has been called a POSS-*ing* (*Pat's smoking cigars*) or an ACC-*ing* gerund (*Pat smoking cigars*). The verbal gerunds are quite an old issue in English syntax, and there has long been a considerable amount of discussion of them in generative grammar. But Malouf (2000), a pioneering Constraint-Based lexicalist approach to verbal and nominal gerunds, has reminded us that there are still many interesting questions to be explored in this area.

   Gerunds constitute a very broad issue in English syntax, but we will focus on gerundive complements in this paper. Before presenting our analyses in Section 3, we discuss categorial status of the verbal gerund and some formal mechanisms to treat them in Section 2, highlighting the theoretical significance of Malouf (2000)'s study of 'mixed categories.' I consider a tentative alternative in Section 4 before I conclude in Section 5.

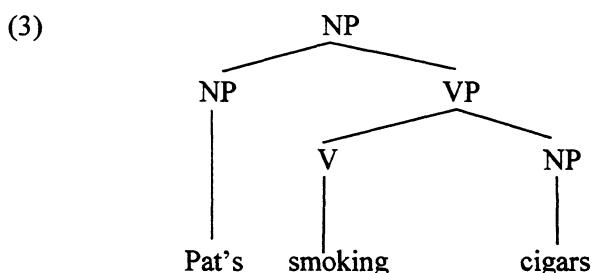## 2 The Lexical Category *gerund*: New Interpretation of a Mixed Category

As is well known, gerunds are two-faced: they are like verbs and like nouns, depending on where one is placed and what one looks at. Verbal gerunds are like verbs when we notice that they take the same complements as the verbs from which they are derived. (E.g. Compare *Pat's smoking cigars* with *Pat smokes cigars*.) Their character as a verb is also shown by the fact that they are modified by adverbs, not by adjectives:

(2) Pat disapproved of my *quiet/quietly leaving before anyone noticed.

And they are like nouns in that they have the external distribution of NPs. A verbal gerund can occur in a subject position as in a sentence like *Speaking English is obligatory in this room*, in a direct object position as in (1) above and in an object position of a preposition as in (2).
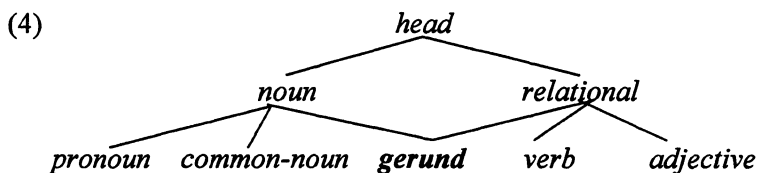
We can say that a gerund is a verb internally and a noun externally. We can also say that it is not wholly a verb or a noun, but it is partly a verb and partly a noun. Speaking about verbal gerunds in such an informal way seems to make sense and even sounds insightful. But we run into trouble immediately when we try to be formally precise about its categorial status. In any formal syntax, where a syntactic category is a function from words to a distinct class, a verbal gerund can be either a verb or a noun or something else, but it cannot be both a verb and a noun; if it is a verb, it cannot be a noun and if it is a noun, it cannot be a verb. Thus the dual character of a gerund has posed a serious problem for the traditional view of parts of speech.

After arguing against all derivational analyses under which the suffix *–ing* is taken to be a syntactic category because they violate the lexical integrity principle that a word cannot be decomposed in syntax, Malouf shows that the previous proposals about the structure of a verbal gerund, whether derivational or nonderivational, are all variants of the view represented in the following tree:

(3)
```
                    NP
           _____/  _____
         NP                    VP
         |                ____/  \____
         |              V            NP
         |              |            |
         |              |            |
       Pat's         smoking       cigars
```
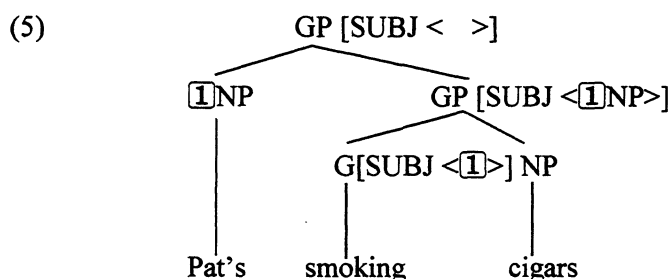
Under this view, 'internally verbal and externally nominal' is literally expressed: the gerund *eating* is a verb and it forms a VP with its direct object complement, and then the VP combines with its genitive subject NP to become an NP. By permitting a categorial change-over from V to N in the top local tree, (3) abandons a fundamentally desirable assumption, usually expressed by X-bar syntax, that is, that noun and verb phrases are endocentric in English (and perhaps in all other languages).

Malouf's surprisingly simple solution to this problem starts with the introduction of a new syntactic category named *gerund*. This category is the subtype of *noun* and, at the same time, it is also a subtype of the type *relational*, along with *verb* and *adjective*. Its position in a partial multiple inheritance type hierarchy is shown below:

(4)
```
                          head
                  _____/    _____
               noun                  relational
            __/    |   \__          __/      \__
      pronoun  common-noun  gerund    verb      adjective
```

The category *relational* is characterized by its abilities of being modified by adverbs but not by adjectives and of having complements owing to its relational meanings. In a type inheritance hierarchy, a type inherits all the properties of its supertype. Hence, since *gerund* is the subtype of *noun*, its projection, i.e. Gerund Phrase (GP), can occur anywhere NP, the projection of its supertype *noun*, occurs. The noun-like distribution of a verbal gerund in a sentence follows from this: the verbal gerund is a kind of *noun*. The internal structure of a verbal gerund is accounted for by the fact that the category *gerund* is a subtype of the type *relational*. But *gerund* and *verb* are distinct from each other, i.e., one is not a subtype of the other, and therefore GPs can not always occur where true VPs occur and vice versa.

Equipped with the new category *gerund*, (3) will have to be modified as follows:

(5)
$$\text{GP [SUBJ < >]}$$

```
         GP [SUBJ <  >]
        /            \
    [1]NP          GP [SUBJ <[1]NP>]
      |            /          \
      |      G[SUBJ <[1]>]    NP
      |          |             |
    Pat's     smoking        cigars
```

Under this analysis, *eating* is a gerund and it is projected into an unsaturated GP[SUBJ<[1]NP>] and then a saturated GP[SUBJ< >]. The two GPs are endocentric and there is no change-over of syntactic categories. And the G, which is a subtype of *verb* or a kind of verb, can take a direct object complement. The GP, which is a kind of NP, can be the direct object of a transitive verb like *hate* in (1). Thus (5) can express the two-faced properties of the verbal gerund, 'verbal inside and nominal outside,' without causing any brute-force changes in the categorial status as in (4).

All the phrases in the tree including are understood as 'syntactic constructions' in the sense of Fillmore and Kay (to appear) and Sag (1997) and Bouma et al (to appear). Following Malouf (2000), GP[SUBJ <NP>] belongs to a *head-complement-construction*, and GP[SUBJ < >] is classified into two construction types: *noun-possessive-construction* and *nonfinite-head-subject-construction*. Like any construction, each construction is subject to specific type constraints, as is presented informally below. (See Malouf (2000) for formal versions of type constrains on verbal gerunds. Sag and Wasow (1999), Bouma et al (to appear) and Kim (2000), among others, for a full detail of type constraints.)
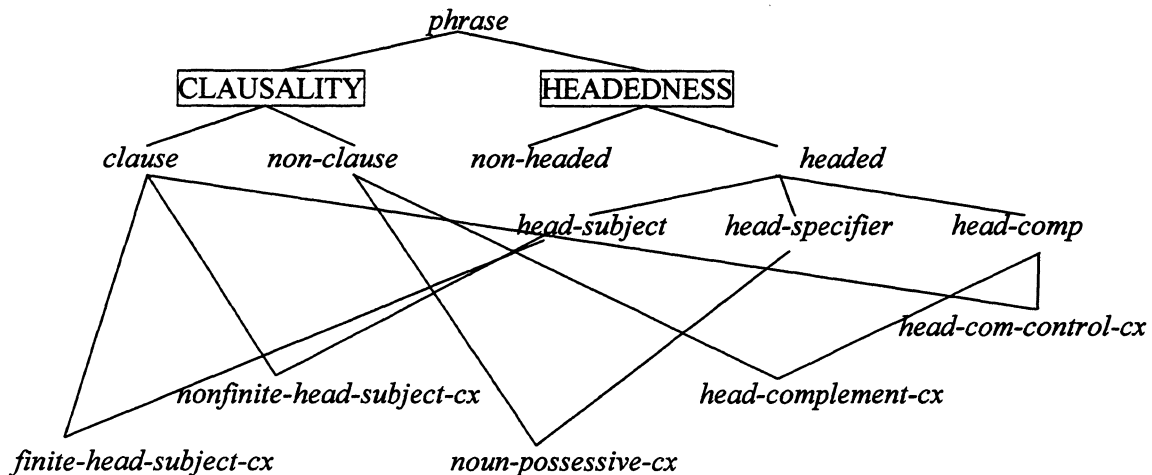
(6) Type constraint on *head-complement-construction*
    A phrase is composed of its head daughter and the head daughter's complement(s).

(7) Type constraint on *noun-possessive-construction*
    A noun phrase is composed of its head daughter and a genitive noun phrase

(8) Type constraint on *nonfinite-head-subject-construction*
    The subject of a *nonfinite-head-subject-construction* is an accusative NP.

In order for these construction constraints to work properly, of course, their supertypes and their constraints must also be defined. The following three subtypes of the *headed-phrase* are directly relevant to our present discussion:

(9) *headed-specifier-phrase*
    A head daughter's SP(ECIFIE)R value is structure-shared with (or identical with) its non-head daughter's SYNSEM value.

(10) *head-subject-phrase*
    A head daughter's SUBJ value is structure-shared with its non-head daughter's SYNSEM value.

(11) *head-complement-phrase*
    A head daughter's COMPS value is structure-shared with its non-head daughter's SYNSEM value.

All these constructions are related with each other in a hierarchy so that subtypes may inherit all the properties of their supertypes. In other words, they are fit into a multiple inheritance hierarchy like (12) given by Malouf (2000: 15), for example.

(12) Some English construction types

phrase

CLAUSALITY HEADEDNESS

clause *non-clause* *non-headed* *headed*

head-subject *head-specifier* *head-comp*

head-com-control-cx

nonfinite-head-subject-cx *head-complement-cx*

finite-head-subject-cx *noun-possessive-cx*

(13) Constraint on the type *clause*:
　　　　Its SUBJ value is either empty or nonempty, and if nonempty, it is either a PRO or a gap.

This means that the type *clause* is a saturated phrase, satisfying all the valence requirements. (That the SUBJ value is PRO means that the clause has an unexpressed or 'understood' subject. The value *gap* is used to account for unbounded dependency constructions, which we are not concerned with in this paper.) Given the hierarchy (12), the type *nonfinite-head-subject-construction* is a subtype of the type *clause* and also a subtype of the type *head-subject-phrase*, and so it inherits all the properties of the two supertypes. Thus being a saturated phrase, it can be used as an independent clause, or it can be part of a sentence.

Going back to (5), notice that the genitive NP *Pats's* and GP *eating fast food* are combined to become a GP by the constraint of a *noun-possessive-cx* (7) and that the category of the GP is *gerund* all the way from bottom to top, satisfying the endocentricity condition. However, the constraint (7) states that the category of a *noun-possessive-cx* is a noun, and the category of the GP *Pat's eating fast food* is not a *noun* but a *gerund*. So the condition (7) and the GP in (5) appear to be conflicting each other. But, in fact, they do not. The GP is a *noun-possessive-cx* because of the hierarchical fact that *gerund* is a subtype of *noun* as defined in the type hierarchy (4). In other words, the GP satisfies the condition that the category of the *noun-possessive-construction* must be a noun, because this condition subsumes the fact that the construction is a *gerund*. This is the way in which the 'mixed category' deals with the dual properties of the verbal gerund. We now can say in a perfectly comfortable manner, given the hierarchies (4) and (12) together with the construction type constraints, that a verbal gerund like *Pat's eating fast food* is categorically a kind of noun performing the task of a verb.

It is theoretically interesting to be able to say that a verbal gerund is a kind of noun. By saying so, we are claiming that certain things are not exactly or typically a noun or a verb, but only approximately a noun having some properties of a verb. In formal syntax, a certain word is either a verb or a noun, but it is difficult to imagine that a certain word is somewhere in between a noun and a verb. But precisely that kind of idea becomes possible owing to the mixed category *gerund* as defined in (4). In supporting this position, Malouf cites Wittgenstein (1968) who argues against defining terms like *game* precisely in favor of (mere) family resemblances and Rosch (1973) who introduces the notion of prototype to show that people perceive some categories in relative terms, not in absolute terms. Following Croft (1991), Malouf defines syntactic categories as 'protypical' pairings of semantic type and pragmatic function. In terms of Croft's prototype categories, words like *kisses* or *eat* are typically verbs and words like *book* or *food* are typically nouns, while words like *kissing* or *eating* are something like a noun with some verb-like potentials. Put differently, verbal gerunds are very much similar to nouns and slightly similar to verbs, but not exactly nouns or verbs. As we observed above, in the hierarchy (4), the type *gerund* is a subtype of the *noun* and of the *relational* simultaneously, and

that it is not a subtype of the *verb* but a subtype of the type *relational* and one of the subtypes of the *relational* is the *verb*. So *gerund* and *verb* are completely distinct from each other. For this reason, verbal gerunds can occur wherever true NPs occur, but they can occur only in limited contexts where true VPs occur, as we will see shortly.

3 Some Verbs and Their Gerundive Complements

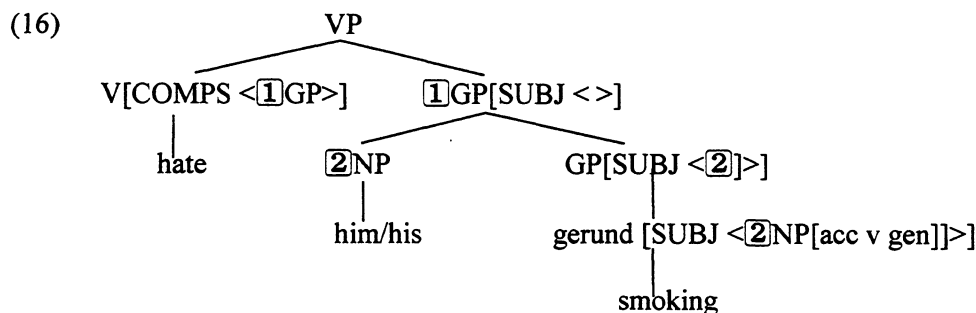The following examples illustrate the typical occurrences of gerundive complements:

(14) a. I disliked him/his smoking. b. Everyone hated him/his smoking heavily.
     c. I don't mind him/his smoking. d. We remember Sandy/Sandy's describing the project.
     e. Mary discussed Pat/Pat's coming to visit.

The verbs in (14) permit both ACC-*ing* and POSS-*ing* gerunds as their complement. It can be shown by (15) below that both POSS-*ing* and ACC-*ing* gerunds are the direct object NP.

(15) a. His/Him smoking heavily was hated by everyone.
     b. What I disliked was his/him smoking.
     c. Everyone hated (the fact) that he smoked heavily.

The fact that a verbal gerund is passivized as in (15a) shows that verbs like *hate, dislike, discuss* in (14) all belong to the class *transitive-verb*.[1] The pseudo-cleft constructions like (15b) show that the verbal gerund is an NP. Note that the gerundive complement is a GP, which is a subtype of an NP, as we discussed in Section 2. The factive *that* clause (15c) can be a semantic evidence for gerundive complements' sentence-like property.

The structure of the VP in (14a) can be represented as (16), which confirms all that we have discussed so far.

(16)

                           VP

V[COMPS <①GP>]   ①GP[SUBJ < >]

    |
   hate   ②NP   GP[SUBJ <②]>]

           | |
       him/his   gerund [SUBJ <②NP[acc v gen]]>]

                          smoking

Note that the complement of this verb is a saturated GP[SUBJ < >], thus having discharged a genitive or an accusative subject.

One might wonder whether the accusative NP is a raised direct object as in sentences like *We expected him to be a heavy smoker* or not, but the following ungrammatical sentences show that it is not:

(17) a. *He was hated smoking.   b. *Mary was discussed coming to visit.

---

[1] We assume that the passivization lexical rule applies to a verb lexeme and produces a passive verb under one condition: the verb lexeme belongs to the type *transitive-verb*. The *transitive-verb* type, in turn, is a class of verbs taking an NP plus zero or more other things as its complement. See Sag and Wasow (1999: 233-249) for more in detail about passive constructions.

Consider the following sentences in which neither ACC-*ing* gerunds nor POSS-*ing* gerunds are allowed to occur:

(18) a. We enjoyed *him/*us/?*our laughing heartily.
     b. He denied *him/*us/?*his having said that.

The following passive constructions show that the subjectless gerunds are direct object complements:

(19) a. Laughing heartily was enjoyed by us.
     b. Having said that was denied by him.

If so, verbs like *deny* or *enjoy* must have a lexical constraint (20) that guarantees a subjectless gerund complement:

(20) [COMPS <GP[SUBJ <[PRO]>]]

By this constraint, verbs like *deny* or *enjoy* exclude both a *possessive-noun-cx* and the *nonfinite-head-subject-cx* from the possibility of becoming their complements. And the subjectless verbal gerund occurs if the SUBJ value is PRO. So we call such a verbal gerund a 'PRO-*ing* gerund'. The identity of PRO is determined by an essentially semantic Control Theory (21), an informal version adapted from Pollard and Sag (1994) by Malouf (2000):

(21) Control Theory
     If the CONTENT of an unsaturated phrase is an argument of a control relation, then the subject
     of that phrase is coindexed with the INFLUENCE, COMMITOR, or EXPERIENCER value,
     according as the control relation is of sort *influence*, *commitment*, or *orientation*, respectively.
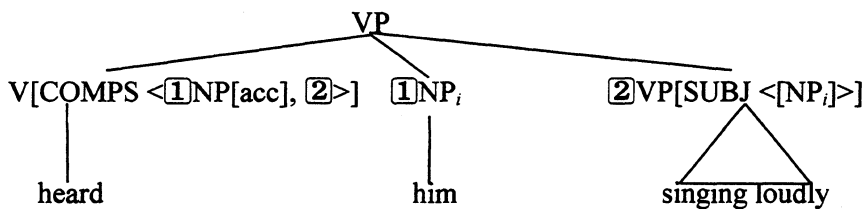
Since *enjoy* or *deny* in (18) is an *orientation* verb, the unexpressed subject of its complement is coindexed with the EXPERIENCER role. Since the EXPERIENCER role is played by the matrix subject, the unexpressed subject of the gerund (*laughing* in (18a), for example) is understood as identical with the matrix subject (that is, *We*). In case the matrix verb is an *influence* verb like *prevent* or *caution* as in *I prevented him from ruining his health* or *I cautioned him against ruining his health*, the unexpressed subject of the gerundive complement is coindexed with the INFLUENCED role. Therefore, the unexpressed subject is coreferential with the direct object of the matrix verb (*him* in the above examples).

Now consider perception verbs like *see* or *hear*, which do not allow genitive NPs:

(22) a. We saw him/*his smoking.
     b. We heard him/*his singing loudly.
     c. I caught him/*his stealing money.

If the –*ing* forms are gerunds, the occurrence of the accusative subject only is a problem. It is unclear how one could make verbs choose an ACC-*ing* gerund exclusively. A simple way of accounting for ungrammatical -*ing* forms in (22) is to assume that the –*ing* complement of a perception verb is not a verbal gerund, but a participial VP. Thus, I argue that the structure of the VP of (22b), for example, is like this:

(23)

```
                              VP
          ┌───────────────────┼─────────────────────┐
 V[COMPS <①NP[acc], ②>]     ①NP_i          ②VP[SUBJ <[NP_i]>]
          │                    │                    ╱╲
        heard                 him            singing loudly
```

The unexpressed subject must be coindexed with the accusative direct object, just as in other object-Equi verbs, also in accordance with the Control Theory, which we will discuss shortly.

Because the SUBJ value of the complement VP is nonempty, the SUBJ value cannot be discharged within the VP, so ungrammatical sentences like (24) are prevented from occurring.

(24) *We heard him his singing loudly.

Note that the analysis in (23) predicts a passive like *He was heard singing loudly*, but not a passive like **Singing loudly was heard him* or **His/Him singing loudly was heard*. This prediction is precisely what we expect: the direct object can be passivized, but the participial VP cannot be passivized and there is no way of passivizing *him singing loudly* because it does not even form a constituent.

Now consider sentences in (25) which are similar to (18) in disallowing POSS-*ing* and ACC-*ing* gerunds.

(25) a. They continued/started *their/*our/*them smoking heavily.
　　　b. They tried *their/*our/*them speaking clearly.
　　　c. I stopped *his/*my/*me writing the report.

That these verbs allow neither possessive nor accusative NPs suggests that they are not gerunds at all. The occurrence of adverb modifiers and direct object complements leads us to believe that they are not derived nominals, either. The only remaining possibility is that they are VP whose VFORM is present participle. This is indeed confirmed by the nonexistence of passive sentences as follows:

(26) a. *Smoking heavily was continued.
　　　b. *Smoking heavily was tried.

This appears to be puzzling, considering that GP can occur wherever NP occurs. Consider the following:

(27) a. They continued the story.
　　　b. They tried this corner.

As simple NPs occur as complements, we expect that GP should occur. But in fact they do not. The puzzle will be dissolved when we notice that *continue* or *try* in (27) is different in meaning from those in (25). The former *try* in (27) means something similar to *test* while that in (25) means something similar to *attempt*, and *continue* in (27) means something like 'resume or revive' but *continue* in (25) has an auxiliary-like meaning. The semantic differences are directly reflected in the syntactic categories: the former are *transitive-verbs*, but the latter are not. Accordingly, while we have ungrammatical passive sentences (26), we do have passive sentences (28) originated from (27).

(28) a. The story was continued.
　　　b. This corner was tried.

We agree with Sag and Wasow (1999: 188), who suggests that the -*ing* form in a sentence like (29) is a present-participial VP, rather than a verbal gerund.

(29) Ashley began singing Christmas carols in October.

It has been long recognised that verbs like *begin* are ambiguous: one belongs to the *strict transitive* type taking a pure NP complement while the other is what we might call an oblique verb as it takes an infinitival or participle VP complement obligatorily. The *begin* in (29) belongs to the latter category, as opposed to the *begin* in sentences like *She began a new club*. This semantic and syntactic difference explains why B's response is inappropriate as an answer to A's question in the dialog (30), and why C's utterance is not a felicitous reply to A's question in (31):
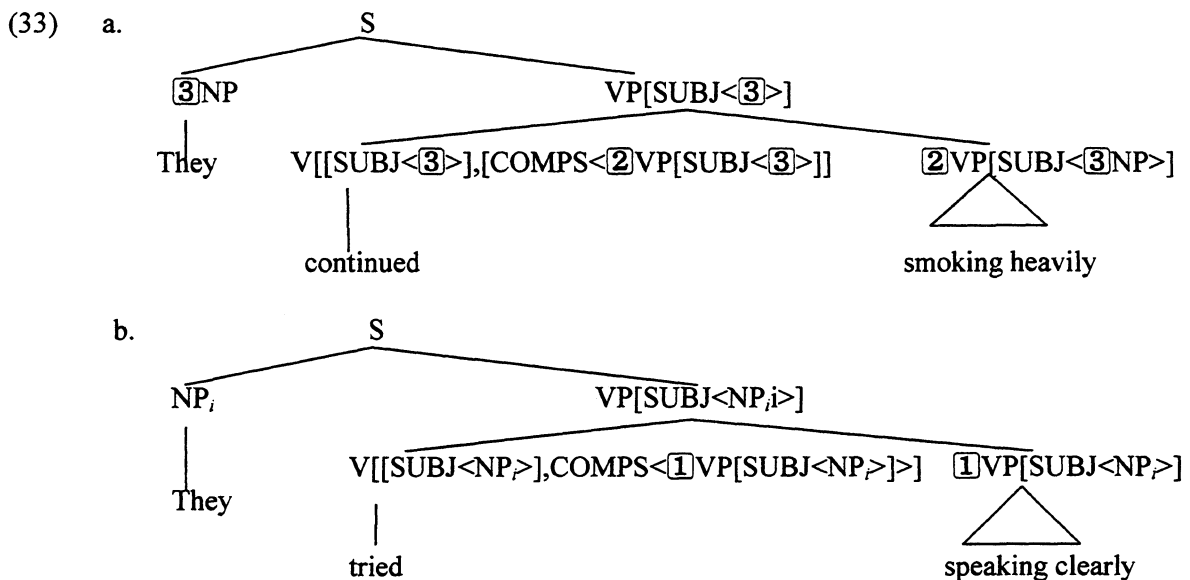
(30) A: What did Ashley begin in October?
    *B: She began singing Christmas carols.
    C: She began a new club.

(31) A: What did Ashley begin doing in October?
    B: She began singing Christmas carols.
    *C: She began a new club.

The contrasts in the following pseudo-cleft sentences also follow from the distinction between the transitive *begin* and the oblique *begin*.

(32) a. What she began in October was a new club.
    b. What she began doing in October was singing Christmas carols.
    c. ?*What she began in October was singing Christmas carols
    d. *What she began doing in October was a new club.

As a conclusion, thus, I argue that the verbs like *continue* and *stop* in (25) are Raising Verbs requiring a present-participial VP complement whose SUBJ value is nonempty and that the verbs like *try* are Equi Verbs. The following structures (33a) and (33b) for (25a) and (25b) respectively illustrate the points in question. Note, in each structure, that the verbal complement is not a GP but a VP[participle].

(33) a.

```
                       S
          _____
      3NP                          VP[SUBJ<3>]
       |                 _____
      They     V[[SUBJ<3>],[COMPS<2VP[SUBJ<3>]]]     2VP[SUBJ<3NP>]
                         |                                 /\
                     continued                       smoking heavily
```

b.

```
                     S
          _____
      NPᵢ                        VP[SUBJ<NPᵢi>]
       |                 _____
     They     V[[SUBJ<NPⱼ>],COMPS<1VP[SUBJ<NPⱼ>]>]    1VP[SUBJ<NPⱼ>]
                         |                                 /\
                       tried                       speaking clearly
```

Finally, we turn to somewhat curious *-ing* complements such as those shown in (34).

(34) a. This door wants (*his/*him) painting/*to paint/*the painting/*it.
    b. This chapter needs (*my/*me) rewriting/*to rewrite/*the rewriting/*it.
    c. This problem deserves (*our/*us) solving.

It seems that the -ing complements are different from all the previous examples that we have examined so far. Not only are they subjectless, but they do not allow simple NPs, as shown in unacceptable sentences like ?*The door wants a painting job as opposed to acceptable The man wants a painting job. (The verb want in the latter example means something similar to desire, but that in the former does not mean this.) What is most peculiar about the –ing complements here is its passive meaning, and because of the passive meaning, the to-infinitival VPs cannot occur. If they occur anyway, they have to be passivized as is seen in (35) below.

(35) a. This door wants to be painted.   b. This chapter needs to be rewritten.
    c. This problem deserves to be solved.

Since the meaning is passive, the direct object cannot occur. The unexpressed subject cannot be identified within the clause, and it cannot be determined by the Control Theory . All this leads us to suspect that these -ing complements are gerunds. They cannot be present-participial VPs, either, because adverbs like carefully or no cannot modify them as shown in (36).

(36). a. *This problem deserves solving <u>carefully</u>.
    b. It will need no/*<u>not</u> accounting for.

I argue that they are derived nominal gerunds, like singing in I hated loud singing. All the facts that are foreign to verbal gerunds immediately follow from nominal gerunds. That the adjective no, but not the adverb not, can modify the -ing complement clearly indicates that the -ing form is a nominal.

Where does the passive meaning come from? It seems to me that the passive meaning is a consequence of the semantic-pragmatic interactions of the particular meanings of the matrix verb and the complement. It is not clear exactly how the interactions work, but it is clear that the passive meaning has nothing to do with syntactic passivization itself.

To sum up, we have so far discussed five different kinds of -ing forms: present participle VPs, nominal gerunds, and three different kinds of verbal gerunds. These are shown in (37).
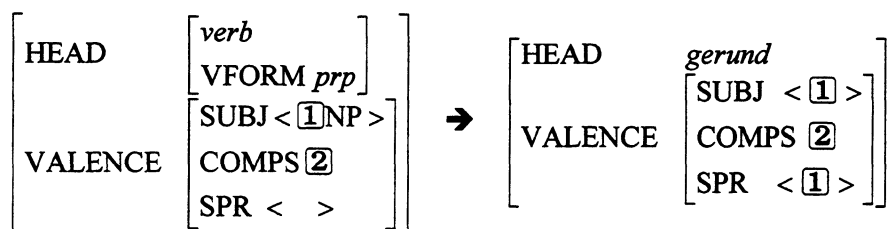
(37) Kinds of -ing form
    a. Present-Participial VP (They continued <u>singing loudly</u>. They tried <u>speaking clearly</u>. We caught him <u>stealing money</u>.)
    b. Nominal Gerund (The door wants <u>fixing</u>.)
    c. Verbal Gerund
       i. POSS-ing Gerund (I hate <u>Pat's smoking heavily</u>.)
       ii. ACC-ing Gerund (I hate <u>Pat smoking heavily</u>.)
       iii. PRO-ing Gerund (He denied <u>having said that</u>. I prevented him from <u>ruining his health</u>.)

I do not claim that these exhaust all constructions involving verbal gerunds, but as a result of the discussion so far, it seems to me, the kinds of gerundive complements are clearly identified and their structures are characterized in a more consistent way.

4 Alternative Explanations?

Malouf (2000: 66) derives verbal gerunds from present-participles (prp) by the lexical rule (38).

(38) Verbal Gerund Lexical Rule

$$
\begin{bmatrix}
\text{HEAD} & \begin{bmatrix} verb \\ \text{VFORM } prp \end{bmatrix} \\
\text{VALENCE} & \begin{bmatrix} \text{SUBJ} < \boxed{1}\text{NP} > \\ \text{COMPS } \boxed{2} \\ \text{SPR} < \quad > \end{bmatrix}
\end{bmatrix}
\Rightarrow
\begin{bmatrix}
\text{HEAD} & gerund \\
\text{VALENCE} & \begin{bmatrix} \text{SUBJ} < \boxed{1} > \\ \text{COMPS } \boxed{2} \\ \text{SPR} < \boxed{1} > \end{bmatrix}
\end{bmatrix}
$$

Given a present participle form, this rule produces a verbal gerund. For example, given the present participle *smoking*, the verbal gerund *smoking* is produced, but because there is no present participle form of modal verbs *will, can*, must, there are no verbal gerunds for them, *willing*, *canning*, *musting*. While a present participle has a subject and does not have a specifier, a verbal gerund has both a specifier and a subject. The subject and the specifier are identified with each other, and for this reason, either the subject or the specifier can occur, but both the subject and the specifier cannot occur.

Note that present participles must be also produced from base forms by another lexical rule. Thus the morphosyntactic processes that produce verbal gerunds can be depicted as (39a).

(39) a. base form—▶ present participle—▶ verbal gerund

b.

base form

present participle   verbal gerund   3rd singular   . . . .
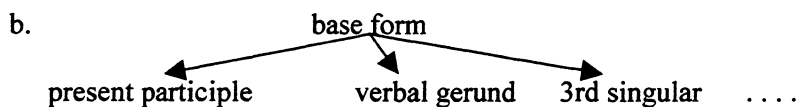
We might ask why a verbal gerund can not be derived from the base just like other verb forms including the present participle are, as is shown in (39b). Other things being equal, this seems to be a better way, not only a possible way. But Malouf gives up this apparently better way. This decision is morphologically motivated; by deriving gerunds from participles, we can explain why certain -*ing* forms like *must-ing* or *can-ing* do not exist. English modal verbs are finite just as third-singular forms like *is* or *are* or *works* are, and gerunds cannot be derived from finite forms; just as *is-ing* or *are-ing* are impossible, so are *must-ing* or *can-ing*. If one derives gerunds from base forms, one cannot explain why *must-ing* or *is-ing* are ungrammatical, without stipulating some further conditions--because *must* and *is* are base forms. So unless we can come up with a way of compromising (39b) so that it may account for those morphological generalizations, we will have to be content with the method of (39a) proposed by Malouf.

Another question I want to raise is: Isn't it sufficient, after all, to have just the two features [VFORM *present-participle*] and [VFORM *gerund*]? If so, for example, then we can simply say that *is* in (40a) requires the former and *enjoys* in (40b) the latter.

(40) a. John is swimming in the river.
      b. John enjoys swimming in the river.

All sorts of constraints that verbal gerunds are subject to which we have discussed in the previous sections would then be the constraints of verbs with the feature [VFORM *gerund*]. Notice that this approach will abolish the category *gerund* and take verbal gerunds to be verbs all the way from bottom to top. My conjecture is that this alternative approach will be able to do whatever Malouf's approach employing the new category *gerund* does, at least on the surface. Are there any differences between the two approaches in other dimensions? I believe that there are some. To the question why verbal gerunds can occur in positions in which NPs typically occur, the two approaches answer differently: Under the alternative [VFORM gerund] approach, verbal gerunds can occur there simply because they are of gerund form. It makes no more sense to ask why gerund forms occur there. Under Malouf's

gerund approach, verbal gerunds can occur there because they ARE a kind of nouns. Under the former analysis, it is an accident that verbal gerunds occurs in places where NPs occur. Under the latter, it is a necessary consequence.

This is not to say that the latter approach has no merit at all and the former has nothing but merits. It is certainly a burden to introduce a new part of speech into linguistic theory. The VFORM approach is free of this burden, which is perhaps a definite merit that the *gerund* approach lacks.

However, this is not a simple question of whether we should add one more part of speech or not. Malouf ask a much more fundamental question: How language works in categorizing things. Malouf agrees with Wittgenstein or Rosch that categories are not fixed and stable concepts, but flexible and unstable conceptualizations. From this perspective, traditional lexical categories such as nouns and verbs can be understood not as fixed and stable, absolutely defined 'real' things, but as unstable bundles of constantly changing properties and potentials in time-space. At the present time of development, nouns and verbs are merely typical bundles of some typical properties, and gerunds are less typical arrangements of certain nominal and verbal properties, rather than imperfect, irregular things. Under this view, the new category *gerund* may lead us to a breakthrough that can open a whole new territory, although it appears to be still premature to decide which way is a better way for sure. I find it very interesting to see a highly intangible thing like *gerund* become fairly transparent in terms of formal syntax.

5   Concluding Remarks

We have examined Malouf's new lexical category *gerund* and, from this perspective, have presented new analyses of some gerundive complements for some typical verbs. We have been able to examine gerundive complements more closely, which did not receive careful attention in the constraint-based framework, and to offer precise analyses for the three subtypes of them, POSS-*ing*, ACC-*ing* and PRO-*ing* gerunds, and we have been able to distinguish between VP[VFORM *participle*] and verbal gerunds consistently.

We find it interesting to explore a new view of lexical categories that can treat 'mixed' two-face categories. It gives us a fresh way of looking at the 'fuzzy' idea like mixed categories, and shows us how we can approach the 'informal' idea of 'something in between nouns and verbs.' I think that it can make a contribution to an understanding of things in real life in a formal theory. It even leads us to hope that formal and functional linguistics will be able to interact with each other in a real sense.

We have shown that the HPSG analyses of verbal complements can be improved by introducing the new category. For a theory which always tries to establish a precisely defined set of definitions, the idea of mixed categories might be seen as a shortcoming or a barrier at first blush. On the contrary, it helps to provide interesting classifications and analyses of gerundive complements. We also saw that the introduction of the new category did not make the theory more complicated than necessary. The constraints such as the Valence Principle and the Control Theory have been shown to work in a usual manner.

Some theoretical problems, including a choice among lexical rules, need further study. Some of the issues on the PRO subject of a verbal gerund also will demand closer examination.

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