

Gerundive Nominals and The Role of Aspect

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1. Introduction

The purpose of this paper is to provide some new data on some properties of a somewhat puzzling construction in English, the gerundive nominal. I will offer an analysis that accounts for this data, and addresses the mixed-categorial nature of the gerund in general. It hinges on looking at the morphosyntax of gerunds in quite a different way than previous analyses. I will also discuss how this material fits into work on the English affix *-ing* in general.

1.1 *How Many -ings?*

The suffix *-ing* in English has a wide range of functions/distributions/uses (cf. Lees (1960), Milsark (1988), Beard (1995) and others). Some of the different uses of *-ing* are shown in (1) below.

- (1) SOME OF THE USES OF *-ing*
- | | |
|------------------------|--|
| a. Present Participle | The boy cutting the flowers |
| b. Adjective | A very cutting remark |
| c. Progressive Aspect | The boy is cutting flowers. |
| d. Resultative Nominal | He brought his cuttings inside. |
| e. Preposition? | I spoke with Joe regarding his application. |

There has been extensive discussion in the literature about how many different *-ings* there are. Previous research has tried to answer the question of which of the *-ings* can be collapsed, and analysed in the same way, and which are truly distinct from each other (Lees (1960), Ross (1972), Reuland (1983), Abney (1987) Milsark (1988), Portner (1994) among others). In other words, which of the *-ings* are the same thing and which are cases of accidental homophony? This is still very much an open question.

1.2 *Gerundive -ing*

In this paper, I will focus on one kind of nominalization that *-ing* can form: the gerund, or gerundive nominal. Gerundive nominals are interesting because of their exocentric characteristics. Although they clearly have the distribution of nominals, they retain some verbal/sentential properties (e.g. Case assignment, modification by adverbs instead of adjectives, etc).

Abney (1987) identifies four types of gerunds, shown (with examples of each type) in (2).

- (2) TYPES OF GERUNDS (Abney 1987)
- a. **Poss-*ing*** Ernie's smoking cigars bothers his mother.
 - b. **PRO-*ing*** Smoking cigars is fun.
 - c. **Acc-*ing*** Ernie smoking cigars bothered his mother.
 - d. **Ing-*of*** Ernie's smoking of the cigar bothered his mother.

The gerund shown in (2a) is called a Poss-*ing* gerund because its subject is a possessive (i.e. gets genitive Case). The gerund shown in (2b) is called a PRO-*ing* gerund because it has no overt subject (i.e. PRO subject). The gerund shown in (2c) is called the Acc-*ing* gerund because the subject gets accusative Case. The gerund shown in (2d) is called the *ing-of* gerund because the gerundive nominal is followed by the preposition *of*. This type of gerund is also called a "mixed nominal" or "nominal gerund" (as opposed to the exocentric types which are sometimes grouped together under the term "verbal gerund" (Wasow and Roeper 1972)).

I will focus here on Poss-*ing* and the PRO-*ing* gerunds shown in (2a) and (2b) respectively. I will put aside Acc-*ing* gerunds because their grammaticality is subject to dialectal variation, and even when grammatical they are subject to many restrictions on usage (Reuland 1983, Abney 1987). I will put aside *ing-of* gerunds because they are just deverbal nouns, lacking the exocentric nature of the Poss-*ing* and the PRO-*ing* gerunds (Wasow and Roeper 1972, Abney 1987), for example, they cannot assign case to their subject, hence the appearance with *of* and they are modified by adjectives, not adverbs.

In contrast to gerundive nominals, English also allows, for many verbs, non-gerundive nominals to be formed. These nominals are marked with one of several possible suffixes (e.g. *-tion*, *-ment*, etc.), are much less productive, and crucially, do not show the exocentric characteristics of gerunds: they are modified by adjectives, not adverbials, and the object must be case-marked with *of*.

1.3 Issues to be Addressed

I will investigate differences between gerunds and non-gerundive nominalizations. I will show that there are important distributional differences between PRO-*ing* and Poss-*ing* gerunds. Previous analyses have either recognized the two types of gerunds as being distinct, then assimilated them (e.g. Milsark 1988), or have not distinguished the two types of gerunds at all (e.g. Portner 1994).

I will show that aspectual information is the key to the differences between gerunds and non-gerundive nominalizations and between the two types of gerunds under consideration.

I will provide an analysis for the morphosyntax of gerunds that can account for their different distributions and properties which are illustrated above

2. The Data

In this section I will introduce the data under consideration, but first, I'll briefly preview the section with an outline of how this section is organized and how it will be presented.

2.1 Overview

I will show that gerunds and non-gerundive derived nominals differ in their ability to refer to different types of events. In order to do that, I will digress briefly to clarify the distinction between facts and events. Then, I will show that it is a property of the event from the verbal domain, aspect (specifically, durativity) which is the key to the difference in the way that nominals can refer to different kinds of events. I will tie this aspect-based difference in nominals into progressive aspect on verbs.

2.2 Facts and Events

Before examining the abilities of different types of nominals to refer to different types of events, it is necessary to clarify the distinction made between FACTS and EVENTS as possible referents of nominals. This is a distinction that has been made by Lees (1960), Vendler (1967), and many others.

The term FACT is used for the intension of an expression, which is not located in space and time. The term EVENT is used for an actual occurrence.

For example, the nominal "Fred's performance" is ambiguous between a fact and an event interpretation. The examples in (3a) and (3b) show this nominal being used in contexts that highlight each of these two interpretations; the fact interpretation and the event interpretation respectively.

- (3) a. FACT:
Fred's performance surprised me because I didn't think he could be persuaded to play in public.
- b. EVENT:
Fred's performance took an hour.

The sentences in (3a) and (3b) are paraphrased in (4a) and (4b) respectively.

- (4) a. The fact that Fred performed surprised me because I didn't think he could be persuaded to play in public.
- b. Fred's actual performance took an hour.

There are various tests that have been used to distinguish the two interpretations. Tests for facthood and eventhood are given in (5) and (6) respectively.

- (5) FACTS
-can occur in frames like 'X will convince us that'
-can occur with factive verbs/predicates

- (6) EVENTS
 -can have time and place predicated of them
 -can occur as complements of verbs like *witness*
 -can occur as subjects of verbs like *occur*

2.3 Nominals and Events

In this paper I will focus on events, and investigate the types of events that nominals can refer to. I will show that if we divide events based on the aspectual properties of telicity and durativity, we find that unlike derived nominals, gerunds can not refer to all types of events.

The property of telicity is used to distinguish events which have a natural endpoint, TELIC events (e.g. *build a house*), from events which do not have a natural endpoint, ATELIC events (e.g. *build*). The property of durativity is used to distinguish DURATIVE events, i. e. events which are ongoing (e.g. *build a house for a year*) from events which occur at a specific POINT IN TIME (e.g. *reach the mountaintop at 3pm*).

The examples in (7) - (9) show the different types of nominalizations under consideration with events of different telicity and durativity. The examples in (7) show each type of nominal in a sentence in which it refers to a telic event. The examples in (8) show the same nominals with a telic durative event, and the examples in (9) show the same nominals with a telic point-in-time event. In each case;

- (a) is a non-gerundive nominalization,
 (b) is a Poss-*ing* gerund,
 (c) is a PRO-*ing* gerund.

- (7) ATELIC EVENT
- a. The destruction of memos takes place at this office.
 - b. * Bill Clinton's destroying memos takes place at this office.
 - c. * PRO destroying memos takes place at this office.
- (8) TELIC POINT-IN-TIME EVENT (Achievement)
- a. The destruction of the memo took place at noon.
 - b. * Bill Clinton's destroying the memo took place at noon.
 - c. * PRO destroying the memo took place at noon.
- (9) TELIC DURATIVE EVENT (ACCOMPLISHMENT)
- a. The destruction of the memo took an hour.
 - b. * Bill Clinton's destroying the memo took an hour.
 - c. PRO destroying the memo took an hour.

2.4 Summary of Data

The paradigm shows the following generalizations:

- Non-gerundive derived nominals can always refer to events (7a, 8a and 9a).
- Gerunds can not refer to events in most cases (7b-c, 8b-c and 9b).
- Gerunds do not behave alike, PRO-*ing* gerunds can refer to telic durative events (9c), while Poss-*ing* gerunds can not (9b).

These generalizations are summarized in the table in (10)

		EVENT TYPE		
		ATELIC	TELIC POINT-IN-TIME	TELIC DURATIVE
(10)	derived nominal	✓	✓	✓
	Poss- <i>ing</i> gerund	*	*	*
	PRO- <i>ing</i> gerund	*	*	✓

3. Previous Analyses

Many different syntactic analyses of gerunds have been proposed (see Abney (1987) or Zucchi (1993) for summaries). Not all of the generalizations that I pointed out above are predicted by these previous analyses. I will briefly discuss the problems with a representative few of these previous analyses.

Abney (1987) posits that PRO-*ing* gerunds could be collapsed to either Poss-*ing* or Acc-*ing* gerunds. Milsark (1988), building on Baker (1985), is interested in unifying all of the uses of -*ing*. He proposes that gerunds occur with either a PRO subject or a lexical subject. This proposal assigns the same structure to both of gerunds and so does not predict that they should behave differently with respect to their ability to refer to different kinds of events.

Portner (1994) proposes an account for the semantics of -*ing*, and notes an imperfective aspect to some gerunds, but does not distinguish Poss-*ing* gerunds and PRO-*ing* gerunds.

4. Gerunds and Progressive Aspect

I will now connect gerunds and progressive aspect and show that this can account for some of the generalizations with respect to the differences in the ability of nominals to refer to events.

I will argue that the differences found between gerunds and non-gerundive nominalizations can be tied to a connection between gerunds and progressive aspect. I will show that PRO-*ing* gerunds (and not Poss-*ing* gerunds) retain properties of the progressive.

This connection to the progressive will explain the role of telicity and durativity since verbs marked with the progressive ending -*ing* describe actions that are continuing or durative (Dowty (1979), Landman (1992), and many others). The durative nature of the progressive is illustrated when the two verb types are embedded under verbs of perception. This is shown with the contrast between (11) and (12).

The predicate ‘run to the store’ is telic. The non-progressive verb *run* in (11) below refers to a completed action. That is, Ernie saw that Bert actually got to the store. In contrast, the progressive verb *running* in (12) refers to an action that was ongoing. So, Ernie only saw Bert in the process of going to the store, he did not necessarily reach the store.

- (11) Ernie saw Bert run to the store.
 (12) Ernie saw Bert running to the store.

The durative properties of the progressive can also be seen with the imperfective paradox and the achievement vs. accomplishment distinction, which has been widely discussed.¹

4.1 *PRO* vs. Overt Subject

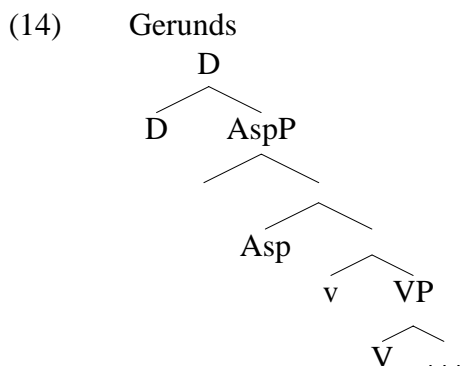
The presence/absence of an overt subject is contributing to the gerunds in an important way. But, it is interesting to note that the presence or absence of an overt subject does not make any difference with the non-gerundive derived nominals. The examples in (13) show a non-gerundive derived nominal referring to events of each aspectual type discussed above; atelic (13a), telic point-in-time (13b) and telic durative (13c). The grammaticality of these examples shows that a non-gerundive derived nominal which has an overt subject can refer to each of these event types. Recall that this contrasts with the corresponding Poss-*ing* gerund cases, which are all ungrammatical.

- (13) a. Clinton’s destruction of memos takes place in secret.
 b. Clinton’s destruction of the memo took place at noon.
 c. Clinton’s destruction of the memo took an hour.

So, we need a way to connect the presence/absence of an overt subject in gerunds with aspect.

4.2 Structure: Morphosyntactic Analysis

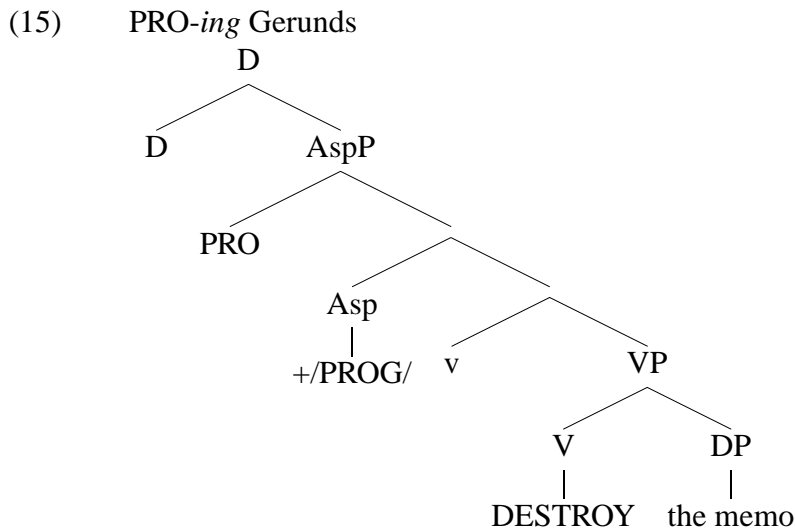
In order to make this connection between the presence or absence of an overt subject in gerunds with aspect, I will elaborate on the structure for gerunds proposed in Marantz (1997) (also Harley and Noyer (1997)), I propose the structure for gerunds shown schematically in (14).



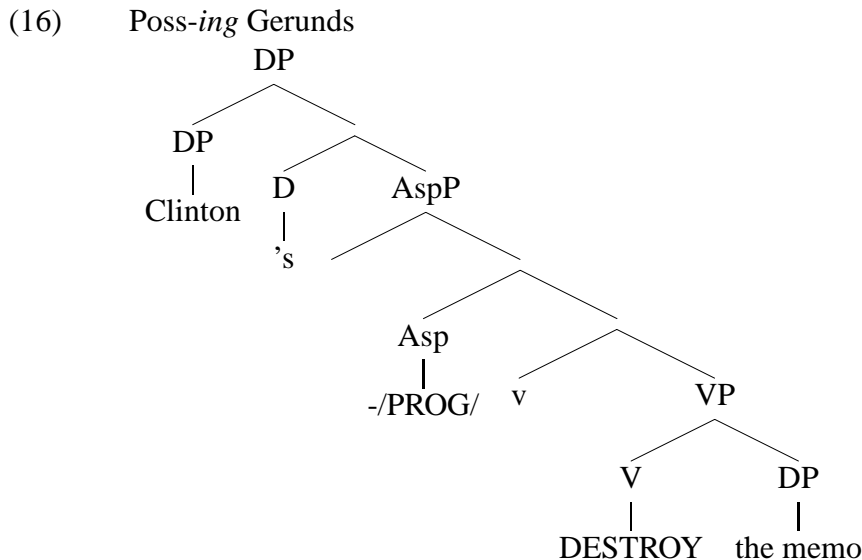
The part of the structure shown in (14) which is an elaboration of Marantz's structure is the presence of a functional projection, Asp(ect)P, which intervenes between D and VP.

Even though Marantz doesn't actually have this functional projection in his structure, he does mention that there probably is some functional projection there, and that it would be the location of *-ing* (which is what I use it for).² Note that like all previous analyses of the syntax of gerunds, this structure has a nominal element at the top to explain the external distribution, and a verbal element inside to explain the verb root and verbal properties of the gerund.

An example of a PRO-*ing* gerund with this structure is given in (15).



An example of a Poss-*ing* gerund with this structure is given in (16).



The difference between PRO-*ing* and Poss-*ing* gerunds then would be the different semantic features on the Asp head. The PRO-*ing* gerunds would have the same features on the Asp head that the progressive has.

Note that I am using the feature [\pm /PROG/] merely as a convenient shorthand here for distinguishing the two aspectual classes. I am not tied to any particular instantiation of the feature(s) that distinguish progressive. Some possible feature(s) that would instantiate /PROG/ are [\pm durative] or [\pm imperfective]. It might also be the case that the correct feature(s) are privative, not equipollent. So, for example, the PRO-*ing* gerunds could have some feature(s) in common with the progressive, and these feature(s) would be found only on verbs. The feature(s) then would be missing from the Poss-*ing* gerund cases.

Assuming the late-insertion Distributed Morphology theory of morphosyntax (e.g. Halle & Marantz (1993)), -*ing* would then be the realization of the features in Asp. The exact specification of the features is made more difficult by the complicated interactions between the lexical aspect of the verb, the structure, etc. In any case, the important thing here is that we group together PRO-*ing* gerunds with the progressive, separately from Poss-*ing* gerunds.

Late insertion also provides an appealing way in which the exocentric nature of gerunds can be handled.

It remains to be seen exactly why the presence/absence of an overt subject ties in with certain features on the Asp head. Making this connection clearer would certainly be desirable.

It is interesting to note that there is some precedent for the subject playing a role in aspectual factors. As has been widely discussed, aspectual properties are tied to the whole predicate, not just the verb. For example, *run* is atelic, but *run to the store* is telic. Similarly, but much less discussed in the literature, telicity seems also to be tied to the subject of the verb. For example *Sam crossed the finish line.* is telic while *Runners crossed the finish line.* is atelic.

4.3 Summary: Gerunds and Progressive Aspect

I have shown that gerundive nominals can be divided into two classes based on a property of the verbal domain; aspect. These two aspectual classes are distinguished with respect to durativity. PRO-*ing* gerunds can refer to telic durative events. This makes it possible to connect them to progressive aspect. Poss-*ing* gerunds do not share this aspectual property. So, it is possible to partially collapse the uses of -*ing*, but not fully (as previous analyses have tried to do).

5. Conclusions

I have pointed out differences in types of nominals with respect to properties that are part of the verbal domain. I have shown that gerunds differ from non-gerundive derived nominals in their ability to refer to events with different aspectual properties. Although non-gerundive derived nominals can refer to all event types, this is not true for gerunds.

I have shown that Poss-*ing* gerunds differ from PRO-*ing gerunds* in their ability to refer to events with different aspectual properties, i.e. gerunds can be divided into

two aspectual classes with respect to their ability to refer to telic durative events.

I have shown that one of the two aspectual classes of gerunds, that of *PRO-ing* gerunds patterns with that of progressive aspect verbs, while that of *Poss-ing* gerunds does not.

6. Remaining Issues

One remaining question is; What is the structure of the progressive? I have shown that the *-ing* of the progressive is the same as that of the *PRO-ing* gerunds, and different from that of the *Poss-ing* gerunds, but there are still many open questions about the structure of the progressive (e.g. relationship to participles, presence/absence of PRO, etc.).

It is also not clear how *Acc-ing* gerunds fit with the other gerunds described here and with nominals in general.

It also remains to elaborate on the connection between the presence/absence of an overt subject, and features on the Asp(ect) head in general, and more specifically between progressive aspect and gerunds that lack an overt subject. For example, it has been argued that progressives are statives (e.g. Vlach 1981) and that, descriptively/typologically, statives are less agentive (e.g. Michelson 1991), cf. also the distinction in English between stative and eventive passives, and the ability of the latter, but not the former to occur with agents. The role of the subject in aspectual composition also deserves further study. These may provide some clues as to how to link the two.

Endnotes

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¹There is an interesting contrast, that was pointed out to me by Dave Lebeaux, which possibly provides further evidence for the difference between *PRO-ing* and *Poss-ing* gerunds and specifically, the link between progressive aspect and *PRO-ing* but not *Poss-ing* gerunds. This contrast arises when each type of gerund is combined with a stative predicate, as shown in (i). We see that the *PRO-ing* gerund in (a) is grammatical, while the *Poss-ing* gerund in (b) is ungrammatical.

- (i) GERUNDS OF STATIVES
 - a. Loving Marilyn is easy.
 - b. * Albert's loving Marilyn is easy.

So, this contrast indicates that *PRO-ing* gerunds are more compatible with statives than *Poss-ing* gerunds. Since it has been argued that progressives are statives

(cf. Vlach 1981), this provides a link between PRO-*ing* gerunds (and not Poss-*ing* gerunds and progressives. However, factors related to control complicate the issue and make it difficult to interpret these facts.

²See also van Hout and Roeper (1997).

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