

## *The Puzzle of The Gerundive*<sup>†</sup>

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IN THE WINTER OF 1966-1967 Michael Gregory introduced me to the study of both linguistics and the English language. One aspect of the linguistics we studied was its emphasis on 'clines,' or what Quirk (1965) called 'serial relationships'. This study originated in, and pays tribute to, that interest, and also to Michael Gregory's mimeoed English Grammar of that time. But it also reflects Michael's broader interests which led him eventually to GB Theory, while at the same time preserving an outlook which is profoundly functional and contextual.

The English gerundive has long been problematical because of its syntactic ambiguity with respect to category. Internally, it has some properties of a complement sentence. Externally, it has nominal distribution.

Ross (1973) showed that *Acc-ing* and *Poss-ing* constructions are part of a 'squish' with respect to clausal and nominal behaviour. Likewise, Quirk et al. (1972: 133-135) point out the gradience of *-ing* constructions. The *-ing* constructions and their rough positions on a scale or cline descending from most clausal to most nominal are displayed in Table I (next page).

Chomsky (1986: 84) has noted that "a . . . long standing problem is to explain in a principled way why gerunds share properties of clauses and NPs." It is this question that I address, concentrating on *Poss-ing*, *Acc-ing* and the mixed nominal. I will examine 'the categorial solution' (2. below) and 'the feature solution' (4. and 5. below); (of course, features and categories are not independent concepts). Both these solutions attempt to explain the scale in terms of marked properties of universal grammar.

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<sup>†</sup> I would like to thank the participants at the 5th Workshop on Systemic Theory in 1978, and the Spring 1986 meeting of the Linguistics Association of Great Britain for their comments on earlier versions of this material. In particular, I would like to thank Richard Hudson and Louisa Sadler for their patient help with aspects of the gerundive puzzle. The misunderstandings remain my own.

MOST CLAUSAL

cline relation

FINITE	<p>A. TENSED COMPLEMENTS</p> <p>I. <b>That - Complements</b></p> <p>II. <b>Question Word Complements</b></p>
NON-FINITE	<p>B. NON TENSED COMPLEMENTS</p> <p>III. <b>Infinitive</b></p> <p>IV. <b>Gerundive</b></p> <p>(a) <b>Acc-ing</b>, 'sentential' gerundive accusative/common case subject. e.g. <i>him solving the problem so quickly</i></p> <p>(b) <b>PRO-ing</b>, 'sentential' gerundive with no overt subject. e.g. <i>solving the problem so quickly</i></p> <p>(c) <b>Poss-ing</b>, 'sentential' gerundive with genitive subject; <b>factive nominal</b>. e.g. <i>his/John's rapidly solving the problem.</i></p>
NOMINAL	<p>C. NOMINALIZATIONS</p> <p>V. <b>Mixed Nominal</b>; derived nominal in <i>-ing</i>; admits genitive or determiner; 'of' complement; <b>action nominal</b>.</p> <p>VI. <b>Derived Nominals</b> with suffixes other than <i>-ing</i>, i.e. <i>tion</i>, <i>-al</i>, etc.</p>
NOUNS	<p>D. NOMINALS</p> <p>VII. <b>Nouns in -ing</b></p> <p>(a) abstract i.e. <i>boating</i>, <i>schooling</i>, etc.</p> <p>(b) concrete, i.e. <i>roofing</i>, <i>painting</i>, etc..</p>

MOST NOMINAL

TABLE I  
A Cline from Clausal to Nominal in the English Complement System.

However, I will also argue that the reason why the clausal-nominal cline exists at all can be diachronically explained (3. below). Finally, I also briefly speculate that pragmatic *cum* sociolinguistic factors may be relevant to a full account (6. below).

### 1. GRADIENCE AND MARGINALITY

The properties of these janus-faced constructions have been extensively discussed in the literature and it would be impossible to survey them in detail here. However, a few remarks to draw attention to variability, marginality and judgmental uncertainty are in order, partly because they raise the whole issue of core and periphery.

Different nominal and clausal properties cut the above scale at different points. *PRO-ing/Acc-ing* and above on the scale extrapose, a clausal property, while *Poss-ing* and below dislocate, a feature of noun phrases. But characteristically, there is dissent to this judgment. Milsark (1988: 626) judges that only *PRO-ing* extraposes naturally and it is the overt subjects of *Poss-ing* and *Acc-ing* that prevent them from moving to adjunct position without 'heavy' comma intonation.

Consider both the productivity and the regularity of the semantic relationship between the *-ing* forms and the corresponding verb. At the nominal end of the scale, with derived nominals, productivity is very limited and the semantic relationship is idiosyncratic, as one would expect of a lexical phenomenon (Chomsky 1970: 189). But the mixed nominal, the derived nominal in *-ing*, is fully productive, and the semantic relationships involved are every bit as regular as they are in the case of *Poss-ing* and *Acc-ing*.

Consider modification. It is with *Poss-ing* and above on the scale that we find adverbials, in spite of its nominal properties (Schachter 1976). Only derived and mixed nominals have the nominal property of adjectival modification. But there is some disagreement about the data in the case of the latter. Chomsky (1970: 214) finds "adjective insertion . . . quite unnatural in this construction." But Wik (1973: 82f.) disagrees and finds examples of such modification in the Brown Corpus:

- (1) the scientific debunking of the spirit world . . .
- (2) mechanical harvesting of cotton . . .

As for adverbials, Schachter (1976) points out that *Poss-ing* refuses sentence adverbials in initial position and uses this as an argument for its

underlying NP status. But we may note that this is equally good or bad for the clearly clausal *Acc-ing*.

- (3) a. \*I acknowledge perhaps his having been mistaken.  
 b. \*I acknowledge perhaps him having been mistaken.  
 c. \*the fact of yesterday our having had beans again  
 d. \*the fact of yesterday us having had beans again

Furthermore, the mere fact that sentence adverbials occur with gerunds at all is evidence of their sentential status (Kilby 1984: 145). It is even the case that for some speakers mixed nominals accept some adverbials in some peripheral positions, as in the following examples from Jespersen (1954-1958, 5: 109):

- (4) a. the shutting of the gates regularly at ten o'clock  
 b. the daily reading of the Bible aloud to his mother

There seems to be little to choose between (5a, b and c).

- (5) a. the suppressing ruthlessly of all opposition  
 b. the suppressing of all opposition ruthlessly  
 c. the ruthless suppressing of all opposition

By contrast, in the case of derived nominals there is a preference for (6a) over (6b).

- (6) a. the ruthless suppression of all opposition  
 b. \*the suppression ruthlessly of all opposition

I would argue that judgements are equally unclear in the examples (1)-(5). For many examples in this area, you seem to be able to believe what you want to believe. This plasticity of the data is significant.

Both gradience and marginality are well illustrated by determiners. Determiners, including the definite article, occur in mixed and derived nominals, but are generally refused higher in the scale. However, more delicately, we find that a few determiners, the singular proximal demonstrative and the quantifiers 'no' and 'any more' are accepted by *Poss-ing*. Schachter (1976: 210-211) cites the marginal constructions;

- (7) a. This leaving your post has got to stop.  
b. I won't tolerate any more telling tales in school.

Crucially, the prototype definite determiner 'the' is clearly ungrammatical with *Poss-ing* in contemporary English;

- (8) \*The leaving your post has got to stop.

It is the idiosyncratic nature of Schachter's examples that leads Kilby (1984: 144-145) to reject them as evidence for the underlying NP analysis of *Poss-ing*. Rather, Schachter's data is evidence for the marginality and exceptional nature of this form. The definite article is only regularly accepted, indeed its possible substitution for the genitive is critical, for the construction in which a prepositional phrase in 'of' can appear in object position. This distinguishes the mixed nominal from *Poss-ing*. Furthermore, nominals characteristically have number, (proofs, arrivals, abolitions), but it is debatable if any *-ing* constructions do, except for nouns in *-ing*; items like 'fittings' or 'bookings'.

Perhaps, one problem is our habit of thinking of the *-ing* forms as 'constructions,' with names specified by distinct criteria. It might be more useful to conceive of the *-ing* forms as a field or matrix generating structures at the intersection of various dimensional properties, some of which are mutually exclusive, some not. Certain intersections of properties would yield the named prototypical constructions, others, like those illustrated in (7) would occupy peripheral areas. In this sense the relation of the constructions is one of gradient family resemblance.

One also finds variation and judgmental uncertainty in trying to determine grammaticality in the *-ing* part of the scale. One example of this is extraction of *wh* items from complement position. As expected, there seems little disagreement that both *Acc-ing* and *PRO-ing* permit extraction from this position by Long *wh*-movement. This can be treated as diagnostic of their status as complement sentences. (Conflicting with this diagnosis, however, none of the *-ing* constructions in question permit Short *wh*-movement or *whether* alternative questions.) In the case of Long *wh*-movement from subject position *Acc-ing* permits this, but *Poss-ing* does not. Likewise, in the case of Long *wh*-movement from complement position, it is argued that *Acc-ing* permits this, but *Poss-ing* does not. It would seem that with respect to extraction of *wh*, *Acc-ing* is sentential and *Poss-ing* nominal. However, it is at this point on the scale that we also get variation

in judgments of grammaticality of the *wh* sentences. This feature of the data itself is also part of the problem and should be accounted for.<sup>1</sup>

The nature of the gerundive *-ing* data in English, the fact that it is both gradient and variable, and sometimes just plain undecidable, suggests that accounts of it will not only be subject to empirical revision in the light of evidence, but also to conceptual revision as changes take place in the theory family of generative linguistics (Harré 1986: 231f.). The data is plastic and its selection and interpretation is shaped by the conceptual possibilities of the explanatory devices made available by theory. Sometimes some properties are more highly valued; at other times, others. Therefore, we should prefer the account which is theoretically most revealing, irrespective to some degree of the data of grammaticality. The fact

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1. The fact that there is variation in speakers' preferences as regards extraction is noted in the literature (Horn 1975: 359, Footnote 11; Reuland 1983: 108, Footnote 1). Reuland notes that some speakers have a strong preference for *Poss-ing* in all environments. Other speakers vary according to environment. He himself characterizes the norm of *Acc-ing* usage as found in traditional grammars but this gives us no guidance as to extraction. Horn (1975: 359) notes that some speakers accept pronominal *Poss-ing* in examples like (a) which he judges to be marginal:

(a) Which movie would you disapprove of my seeing?

My own judgement is that extraction is possible from both forms but with the order of preference,

1. *Acc-ing*
2. *PRO-ing*
3. pronominal *Poss-ing*
4. lexical *Poss-ing*

But there are conditioning factors. One of these is the 'clausiness' of the form, e.g. features like aspect and voice. It is worth noting that the examples against extraction employed by Horn (1975: 359) and Reuland (1983) only involve proper noun subjects within forms of *Poss-ing* most superficially akin to derived nominals;

- (b) \*Who did you defend Bill's hitting?
- (c) \*Which country did they admire Israel's attacking?
- (d) \*Who did his parents criticize Bill's arguing with?
- (e) \*Who did the papers publicize the NY Giants' beating?

The more 'clausey' the gerundive, the more acceptable is extraction from *Poss-ing*. The verb also affects preferences. Some verbs seem to favour *Poss-ing* over *Acc-ing* and vice versa. Thus, the optimally grammatical case of extraction from *Poss-ing* is pronominal, with a favouring verb, and with as many overt superficial signs of its sentential nature as possible. Conversely, the least preferred situation for extraction from *Poss-ing* will be with a non-favouring verb, a superficial form which could be analyzed as a derived nominal (as is the case in [b] - [e]) and a lexical subject. Judgements also vary by dialect and formality of context, as one would expect from a transitional form.

that revisions in the explanation of *Poss-ing* are as much theoretical as empirical is clearly visible in the Appendix where successive analyses reflect the concepts available within the paradigm.

## 2. THE CATEGORICAL SOLUTION

The earliest solutions were transformational. By the 1970s, solutions to the problem became categorical. This approach asks whether the *Poss-ing* construction should be analysed as NP or S<sup>1</sup> by the categorical rules. It is a question of deciding on the 'real' nature of *Poss-ing* as a categorical structure in such a way as to account for the gradient nature of the data. The range of categorical analyses and how they usually have been assigned to the three main *-ing* constructions until recently is illustrated in Figure 1 (next page).

The analysis proposed by Horn and Schachter is a new kind of categorical structure. This mixed structure quite literally models the mixed properties of *Poss-ing*. Nominal behaviour is attributed to its nominal part, clausal properties to its VP part. This accounts for many properties. For example, it accounts for the appearance of the determiners mentioned above. It does not tell us, however, why all other determiners are excluded, nor why the determined *Poss-ing* constructions are marginalized.

The NP/VP analysis of *Poss-ing*, Analysis II in Figure 1, is open to three main lines of criticism. First, as Jackendoff (1977: 270f.; 1977a: 221f.) points out, it is an exception within X<sup>1</sup> theory, since the main N has no noun head. A category switching schema is necessary which permits

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The following examples use favourable environments in which extraction from *Poss-ing* ought to be possible. Example (h) illustrates topicalization and examples (i) and (j) contrast *Poss-ing* with a parallel derived nominal. I adjudge these examples grammatical, except for (j):

- (f) Which choice did she resent her father's having been forced to make?
  - (g) Which choice did she recall his actually having made?
  - (h) That option I resented his having asked me to reject?
  - (i) Which boy did she report Peter's having said that he did not want to sit next to?
- Compare (i) with (j);
- (j) \*Which boy did she report Peter's insistence that he did not want to sit next to?
- In some optimal environments *Poss-ing* seems preferable to *Acc-ing*, compare:
- (k) ?Which choice did she resent him having been forced to make?
  - (l) Which choice did she resent his having been forced to make?
  - (m) ?Which team did the local paper publicize us not having beaten this year?
  - (n) Which team did the local paper publicize our not having beaten this year?





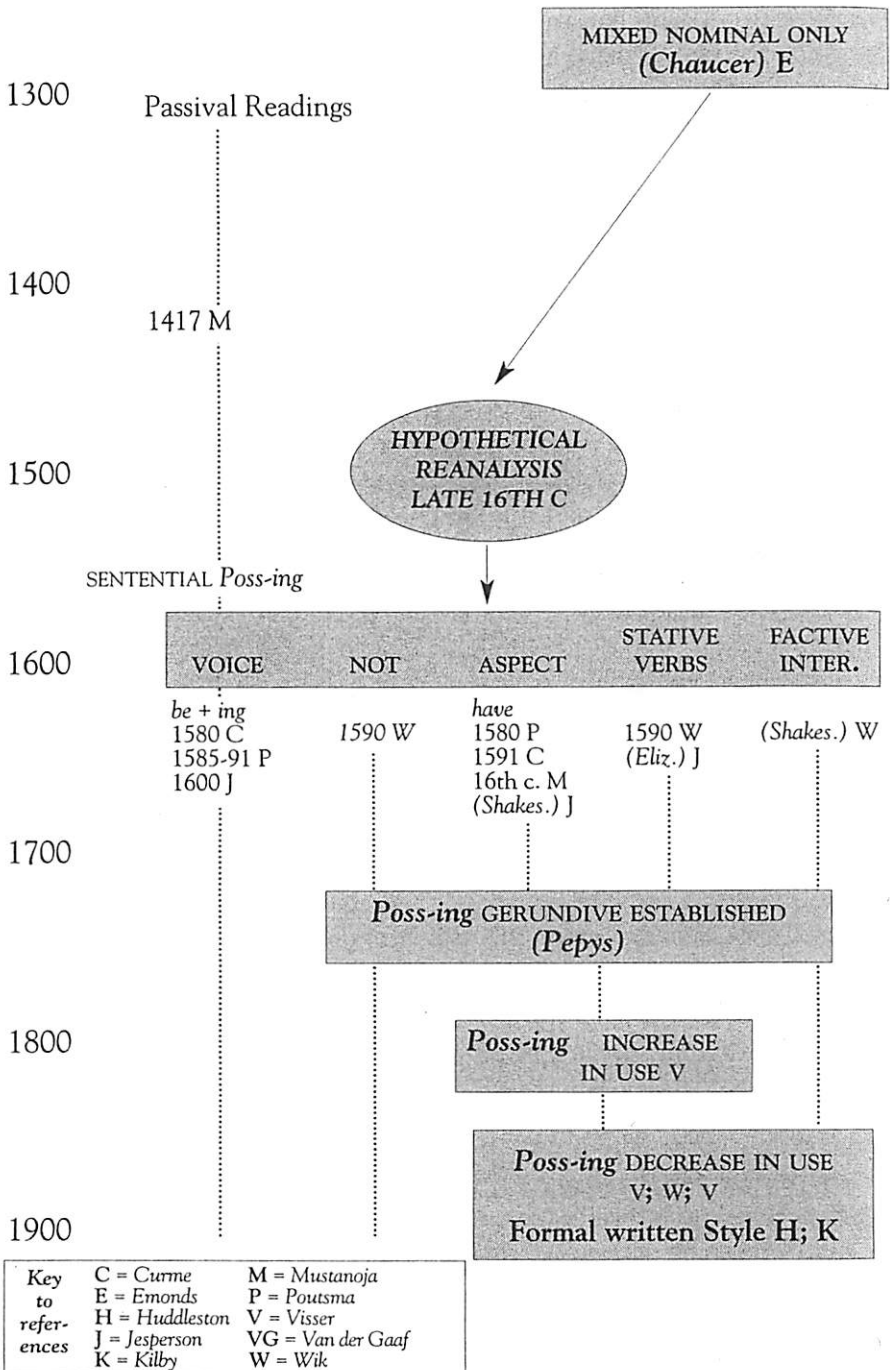
of the control *PRO-ing* construction and lexical NPs in this position. But it does so at the cost of being able to say anything subtle about the differential binding of pronominals and anaphors in subject position in *Acc-ing* and *Poss-ing*, or about the systematic distribution of control and non-control PRO in the *-ing* constructions as a whole. Furthermore, one suspects it is a motivation for the essentially ad hoc mechanism which Chomsky adopts for the assignment of genitive case (Chomsky 1981: 50). The proposal that the subject position in gerunds always be ungoverned, which is a consequence of the NP/VP analysis, thus has a number of undesirable consequences.

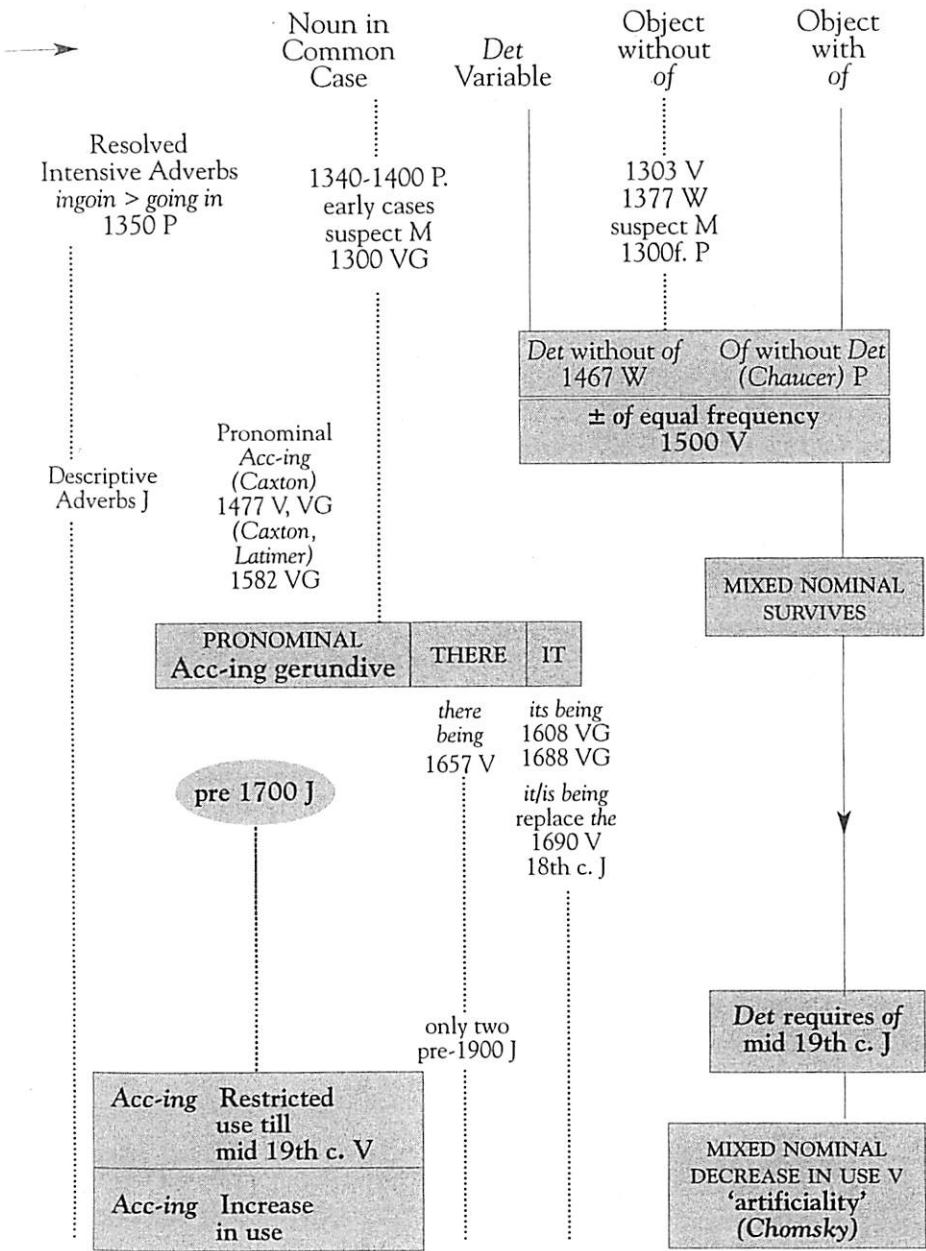
Third, gradience or blendings of types confronts categorization of any sort with a problem; what to do with the in-between types. To the degree that theory requires the clear identification of an item as 'really' either (a deviant kind of) X or Y, there will be a falsification of its intrinsically mixed nature. Phenomena of this kind have long been problematic in linguistics; see Bolinger (1961) for example. Faced with this, there are two issues. Horn and Schachter try to solve the problem in terms of categorical structure. The problem of *Poss-ing* is both posed and solved categorically by the proposal of a mixed structure. But of the devices and principles available, is this the best or only solution? Second, even if we grant the NP/VP analysis, it is arguable that we have not explained why *Poss-ing* is this way. What accounts for the gradience between these *-ing* forms? How comes it that a language permits the Specifier of an NP to enter into construction with a VP? In fact, the NP/VP analysis simply iconically models the fact of the mixed nominal and clausal properties of *Poss-ing* in its mixed categorical structure, attributing different parts of the behaviour to different parts of the structure. We will return to these issues when we look at 'the feature solution' in 6. below. But first, a dip into history.

### 3. DIACHRONIC CONSIDERATIONS

The relationship between the *-ing* forms in question can be explained in diachronic terms. This is what makes the relationship between the constructions systematic. The argument is that contemporary *Acc-ing*, *Poss-ing* and the mixed nominal (i.e. the derived nominal in *-ing*) are historically related and are the result of a single reanalysis involving innovation, transitional forms and various residues and relic forms.

Figure 2 presents a schematic overview of this proposal by showing the first attested dates for relevant properties of *Poss-ing* and *Acc-ing*:





PAGES 104-105: FIGURE 2  
Diachronic Considerations

As Emonds (1973) has shown, in Middle English nominal *-ing* constructions consisted of what we call the mixed nominal, which was clearly an NP. There is agreement in the literature that the gerund in English began life as a nominal and only later gains its clausal properties, (Curme 1931: 483f.; Jespersen 1954-1958, 5: 89f.; Mustanoja 1960: 567f.; Poutsma 1923: 159f.; Strang 1970: 152-153; Visser 1966, 2: sec. 1001, and 1973, 3: sec. 2102; Wik 1973: 106f.).

### 3.1 Variability in the Early Nominal in *-ing*

In the above references there is some divergence of views as to the exact complex of causes which led to the modern gerundive. The process originated in the phonetic identity of gerund and participial *-ing* forms and analogy between nominal, present participle and perhaps infinitive forms. The putative causes of change cannot be examined in detail. However, it is significant that from an early period the complement of the mixed (that is, derived) nominal in *-ing* could appear with or without 'of'. Equally, a determiner might or might not be present. The construction without a determiner and with an accusative object would appear to be very clausal, at least superficially. These features are noted in the top right-hand corner of Figure 2.

The point is that the Middle English nominal in *-ing* possesses the sort of inherent variability which is a prerequisite to linguistic change. Visser (1966, 2, sec. 1124: 1210) claims,

that from the beginning of the fourteenth century to the end of the nineteenth century constructions with 'of' and those without 'of' before the complement of a form in *-ing* preceded by 'the' were used side by side - after 1500 with almost equal frequency -, and that the choice between the two patterns was largely, if not exclusively, a matter of style.

Wik (1973: 126) points out examples where no 'of' appears after the *-ing* form and no determiner precedes it, and Mustanoja (1960: 575) notes that the article is variable whether or not the noun has an 'of' inserted before its complement. Given this variability, the form most marked as an NP would be that with neither determiner nor 'of' before its complement. It would be this form that was susceptible to analogy with the participle, especially if had 'marked' rather verbal functions. Houston (1989: 173f.)

posits that such an analogy is the source of the verbal properties of the gerund. In a text based study, she argues that appositive participles with adverbial functions and verbal nouns in prepositional phrases which have the same use provide a functional basis for the analogical development of the verbal properties of the gerund.

### 3.2 Clausal Features of *Poss-ing*

It seems clear that there is a relatively sudden concentration of first attestations of overtly clausal features in the gerund in the latter half of the 16th century. The relevant properties, displayed at the left centre of Figure 2, are: overtly marked passive voice with 'been'; negation with 'not'; perfect aspect with 'have'; *-ing* forms of stative verbs; factive interpretation; descriptive adverbs; and the emergence of genitive pronominal subjects in complement constructions such as, 'I couldn't imagine his ever being afraid', and genitive NPs in forms like, 'I must prevent this knight's coming'. (Of course, both lexical and pronominal genitive have been standard in all the obviously nominal gerund forms since the earliest times.) I will discuss the appearance of each of these clausal features in turn.

#### 3.2.1 Voice

Although a 'passival' reading was available in gerunds very early, overt voice only appears in the late 16th century. Strang (1970: 152-153) notes the new passive gerund circa 1600. Curme (1931: 484) writes, "As the gerund in the 16th century was felt as having strong verbal force, it began to appear with forms for voice. . . ." His first attestation is 1580. Others are Poutsma (1923: 165), 1585-1591; Jespersen (1954-1958, 5: 114), about 1600, although Mustanoja (1960: 573) gives a 15th century citation.

#### 3.2.2 Aspect

The aspectual 'have' appears at about the same time. Curme (1931: 484) cites Shakespeare, 1591-1595, Poutsma (1923: 166) Sidney's *Arcadia*, 1.68, 1580. Jespersen (1954-1958, 4, sec. 7.8, sec. 22.9 and 5, sec. 9.21) also cites Shakespeare, Mustanoja (1960: 573) the 16th century and Poutsma (1923: 165) the close of that same century.

### 3.2.3 Negation

For negation with 'not,' Wik's (1973: 132) first attested date is 1590 and Jespersen (1954-1958, 5, sec. 9.1: 110) gives the "time of Elizabeth."

### 3.2.4 Adverbials

The appearance of non-descriptive adverbials is early. Both Poutsma (1923: 163) and Jespersen (1954-1958, 5, sec. 9.1: 108f.) give the 14th century as the period in which adverbials such as 'coming down,' 'going in,' 'hence,' 'hither,' 'in' and 'out' etc. appear. For the former, adverbial particles are resolved from compounds such as 'downcoming' or 'ingoing' and placed after the verb. Early descriptive adverbs appear in Chaucer and Caxton and as a rule appear before the verb. There is clearly a movement towards a greater acceptance of descriptive adverbs in nominals by the 16th century as, for example, in Ben Jonson;

(9) The quickly doing of it is the grace (Jespersen 1954-1958, 5, sec. 9.1: 109).

### 3.2.5 Factive Interpretation and *ing* Forms of Stative Verbs

Wik (1973: 125f.) is concerned to account for the origin of the factive gerundive nominal, one that appears as the complement to those predicates that permit factive interpretation. As Kiparsky and Kiparsky (1970) pointed out, this is a key property of the modern *Poss-ing* complement, and analogous to that complements, but not necessarily *Acc-ing* (see Kilby 1984: 141 who points out that in some "typically 'factive' environments, the Accusative-gerund is odd or unacceptable"). Conversely, the factuality of *Poss-ing* is only a tendency (Huddleston 1984: 210).

Wik's account of the origin of the construction need not concern us here in all its detail. However, his first attested example of a gerund that can be taken factively is as complement to 'report' in Shakespeare (*Twelfth Night*, II, 2.11),

(10) . . . unless it be to report your lord's taking of this

I mentioned above the analogy which became possible between

nominal and participial *-ing* constructions after the suffixes became phonologically identical, and Houston's functional hypothesis concerning appositive participles (Houston 1989; Visser 1966: 1065-1098; Poutsma 1923: 160-163; Mustanoja 1960: 567-573). Nominal *-ing* constructions and participial *-ing* constructions became superficially identical in some cases. Another relevant participial construction is that which Wik terms the "predicative accusative." These are accusative *-ing* constructions which occur after verbs of perception (therefore sometimes called perception verb complements). These behave quite differently than *Acc-ing* gerundives and are analyzed as complement sentences (see Akmajian 1977; Declerck 1982). Visser (1973, sec. 2083: 2339f.) points out that this participial construction goes back to Old English. "In Old English the former of the two verbs, (the matrix verb), is usually a verb of physical perception and occasionally a verb of mental perception. In the subsequent period patterns with other verbs were analogically added to the old stock. The tardiness of the development of a VOS (Object/Subject) *ing*-structure, almost bordering on reluctance with verbs of saying and declaring is conspicuous" (for the same point see also Mustanoja 1960: 553).

It is this class of mental and verbal process verbs, Wik (1973: 120f.) feels, that might have played a role in the development of the factive gerundive. The relevant class of verbs includes 'imagine, remember, recollect, visualize,' etc. In this construction the participle "had never been preceded by a noun or pronoun in the genitive" (Wik 1973: 121). He remarks that the optionality of 'of-insertion' at this period means that 'act' gerundives coalesced with predicate accusative participial constructions with such verbs (e.g. Shakespeare, *Henry IV*, Part 2: 2,96),

(11) And then imagine me taking your part

Wik's actual proposed source for factive gerundives, however, is instrumental prepositional or non-prepositional gerunds which appear in causative contexts with so-called 'flip' verbs, "since they can predicate that-clauses and instrumental gerunds which may function as non-prepositional subjects if there is no agent present" (Wik 1973: 130-131). After this, such potentially factive sentential gerunds can appear after ambiguous predicates, as factive complements, by analogy with mental and verbal verb complements such as (10). For Wik, the development of factivity from action nominals is a key to the change — the semantic extension of the gerund.

Be that as it may, Wik's (1973: 132) "earliest indisputable example of a non-prepositional factive gerundive nominal based on a stative verb followed by a straight object and negated by 'not'" is the following (Sidney, Arcadia, cited in Wik, 1973: 132),

(12) Mighty prince, said I, let my not knowing you serve for  
the excuse of my boldness.

### 3.2.6 Pronominal Poss-ing Complements to Mental Process Verbs

Visser (1973, sec. 2102: 2362f.) notes that possessive pronouns (that is, *Poss-ing*) begin to appear in the predicative accusative environments noted above, which earlier had not permitted such forms. Thus we get (13a) as opposed to (13b),

(13) a. I couldn't imagine his ever being afraid.  
b. I couldn't imagine him ever being afraid.

He writes, "Judging from the subjoined evidence this idiom did not appear in print or writing before the beginning of the sixteenth century." The first attested dates for each pronoun are: 'my' (1772); 'your' (1599); 'his' (1526); 'its' (1711); 'our' (1537); 'their' (1475).

### 3.2.7 Genitive Inflection of Lexical Nouns in Predicative Accusative

Visser (1973, sec. 2104: 2366-2367) notes that genitive NPs appear in the subjects of *-ing* complements after such verbs as 'remember, prevent, resent, imagine' giving the contrast,

(14) a. I prevented my father's coming.  
b. I prevented my father coming.

The first attestation of the genitive is 1697.

There seems to be sufficient evidence above to render plausible the claim that there was a reanalysis of the derived nominal in *-ing* yielding a *Poss-ing* construction with clausal properties, and that this process occurred in the 16th century. By the time of Dryden (1655-1700) the "sentential factive gerundive nominal" is well represented (Wik 1973: 134) and the modern form appears in Pepys (1659, 1).



### 3.3 Acc-ing Gerundives

The claim here is that the appearance of a gerundive complement, as opposed to a participial, with its pronominal subject in the accusative and its lexical subject not in the genitive, is part of the same process that led to *Poss-ing*, (although this isn't totally obvious). For Jespersen, non-genitive subjects of gerunds are a development of the increasingly clausal nature of the construction. He dates 'common case' lexical subjects in prepositional contexts such as,

(15) I insist upon Miss Sharp appearing

from about 1700, or slightly earlier (see also Strang, 1970: 153). It is worth quoting Jespersen's hypothesis in full (Jespersen 1954-1958, 5, sec. 9.4: 121f.):

The modern construction . . . is nothing but a consummation of the development of the *-ing*. . . What has happened is simply this: the construction of the *-ing* has approached that of verbs at one more point. Parallel to the construction with a finite verb SVO without any genitive or preposition for S or for O, we had already GO and now we get SG without any preposition or genitive mark attached to S. But the old construction S<sup>2</sup>G (S<sup>2</sup> = genitive of substantive, possessive of pronoun) still retains much of its old force and to some extent keeps the new construction within bounds.

The genitive and common (that is, accusative/nominative) case are variable realizations of the subject of gerundive *-ing* constructions, the latter being more recent and the more complete development of the clausal nature of the construction.

Although I will accept Jespersen's interpretation here, it is somewhat problematic. Just as the inherent variability of the derived nominal in *-ing* is a prerequisite and a symptom of linguistic change, so also is the constructional homonymy and consequent ambiguity as between gerund and present participle forms. The variability leading to syntactic homonymy is the basis for analogy. But, since both predicative accusative (perception and mental verb complements) and modifying participial constructions

have had common case in *-ing* noun phrases from an early period (Visser 1966, sec. 1096, sec. 1102: 1172-1182) then it becomes hard to say exactly when 'gerundive' (that is, eventive, or factual, state or process) interpretations of these *-ing* constructions not in the genitive first occur. If the two constructions coalesce through analogy after mental process predicates, then it is only by virtue of semantic interpretation that we can distinguish them in the absence of subtle data such as behaviour under transformation. This makes it problematical to interpret the common case subject as an early appearance of an *Acc-ing* gerund rather than a participle. Curme (1931: 489f.), in prepositional and verb complement environments, distinguishes participial from gerundive constructions by contrasting descriptive from factual sense. He writes, "We must still use the accusative when we desire to describe rather than merely to state a fact; i.e. when we desire to represent something as proceeding or being repeated. But then the form in *-ing* is a present participial and not a gerund."

In the environments after a preposition or as object of a verb, participial and gerundive can be constructional homonyms. According to Curme, in the former environment, where gerunds have always been more common, "we usually feel the form in *-ing* as a gerund, but we now use either a genitive or an accusative as its subject." In the latter environment, "we now usually feel the form in *-ing* as a gerund whether its subject is genitive or accusative," except when it is descriptive of an act, or potentially a modification of a head word, as it is, for example, in perception verb complements, or in those constructions which can be paraphrased with *while*-clauses. Sometimes with mental process verbs we get a perfect ambiguity between a factual gerundive interpretation and an act-descriptive participial reading as in this example from Thackeray, cited by Wik (1973: 120-121);

(16) I recollect my old governor beating me in that little room.

And, of course, the homonymy is made more acute by the lack of any superficial mark distinguishing plural genitives from common case nouns, once English has lost its morphological case system (Jespersen 1954-1958, 5: 123f.; Curme 1931: 486f.). It is clear, however, that there has been a decline in the use of the genitive in favour of common case in many environments in the 19th and 20th centuries (Visser 1966, sec. 1091, sec. 1100: 1177).

The evidence for the appearance of accusative pronouns as the subjects of gerundives is somewhat clearer. Just as the appearance of genitive pronouns in predicate accusative environments noted above argued for the complement status of *Poss-ing*, so conversely the appearance of pronominal *Acc-ing* in those environments previously the preserve of nominal gerundives will act as evidence for the emergence of *Acc-ing* as a gerundive, rather than as a participial construction. The relevant evidence is summarized on the right centre of Figure 2.

Visser (1966, sec. 1102: 1182-1183) referring to nominal gerundive environments such as,

- (17) a. I hope its all right me coming in.
- b. We were surprised at him knowing our father's name,

notes that the use of the oblique forms, 'me, us, him' and 'them' instead of the genitives,

do not seem on record before the end of the fifteenth century. In the sixteenth, seventeenth and eighteenth centuries the number of cases is restricted, but from the middle of the nineteenth century, instances occur in ever increasing frequency, in spite of adverse criticism of the usage. . . .

Jespersen (1954-1958, 5: 133) notes that the use of the oblique case of personal pronouns is not early. He has only three examples before the 19th century at which time it becomes more frequent. The increasing use of non-genitive forms of lexical subjects noted above shows that both lexical and pronominal non-genitive forms are becoming the preferred form of the gerundive in some environments. This is not true, however, of subject clauses or complements of 'be,' but in this case there is variability which Curme (1931: 488) evaluates in terms of style, ". . . the accusative subject being confined to popular speech: 'Does our (in popular speech us) singing in the room above disturb you?' 'It was our (in popular speech us) coming late disturbed him'." (See also Jespersen 1954-1958, 5: 138 where 'me' and 'him' are referred to as "half-vulgar speech" in these environments.) The above pattern suggests that accusative pronominal subjects of *Acc-ing* gerundives are a recent preference, and not established in all contexts.

### 3.3.1 'It' in Acc-ing

Jespersen (1954-1958, 5: 133) claims that 'it' is the first oblique case to appear as subject of the gerund. It is "found in isolated examples as early as the beginning of the eighteenth century, but 'its' has never ceased to be the form most frequently used." Most of his examples are as subject of 'being.' According to Visser (1966, sec. 1094: 1170), the use of 'its' as a subject of a form in *-ing* is itself quite recent, replacing 'the' in the 17th century, mainly before 'being' and after prepositions in his early examples. The use of 'it' co-exists with 'its' from this same period, (Visser 1966, sec. 1103: 1185).

- (18) a. . . . by the being barrelled up so long (1626)  
 b. . . . of its not being accordingly performed (1679)  
 c. . . . consents to its being published (1683)  
 d. . . . of it being abstracted (1690)  
 e. . . . prevents it being tired (1776)

Again we have both progression from nominal to clausal and sustained variability.

### 3.3.2 'There' in Acc-ing

According to Visser (1966, sec. 1104: 1185), the first occurrence of the "sham subject" 'there' before the *-ing* form of 'to be' is 1657, and of non-local 'there' in absolute *-ing* constructions, 1748. Jespersen (1954-1958, 5: 136) only finds two instances of existential 'there' as subject of the gerund before the 19th century.

The weight of all the above observations suggests a fairly late date for the emergence of the *Acc-ing* gerundive as a development of *Poss-ing*. In contemporary English it would seem that there is variability between genitive and non-genitive subjects of the gerundive, with increasing preference for the latter in most environments. As regards 'it' and 'there' subjects, it seems clear that very sentential *-ing* complements not involving the genitive and freely appearing in NP complement environments are quite recent developments;

- (19) a. I recalled *it being a problem*.  
 b. I disliked *there appearing to be no reason for it*.

### 3.4 Opacity and Reanalysis

Let us hypothesize that there was a reanalysis and extension of the nominal *-ing* gerund in the 16th century. There is the requisite concentration of a multiplicity of innovations in a short time, following upon inherent variability and consequent syntactic homonymy. It seems plausible to argue that the Middle English gerund, a derived nominal in *-ing*, became intolerably opaque as an NP in some of its variants. The exceptionality of the gerund as an NP which gradually increased through the accretion by analogy of clausal properties from participial/predicative accusative constructions meant that a gerundively interpreted form in *-ing* could not be analyzed or acquired solely in terms of the categorical structure of a derived nominal. This led to a radical reanalysis, evidenced by the concentration of first attestations in the late 16th century, which made available a new and distinct structure for *Poss-ing*, split off from the NP structure of the mixed nominal. If Jespersen is right, and the evidence suggests that his treatment is at least plausible, *Acc-ing* gerundives are also a consequence of the same reanalysis, and its more fully completed realization. The contemporary most clausal status of *Acc-ing* (see below and Horn 1975; Reuland 1983) is a testament to this view. Since *Acc-ing* is fairly clearly now a complement sentence, then we can argue that the original reanalysis is from NP to S<sup>1</sup> with *Poss-ing* being a marked intermediate stage between the two.

If the above is correct in outline, the *Acc-ing* complement construction is the most completed form of a reanalysis in which variants of a derived nominal in *-ing* became complement sentences. The *Poss-ing* construction on this view is a transitional form and the contemporary mixed nominal the original NP construction partially preserved in the language. What makes the proposed explanation even more interesting is the preservation of the stages of the change, the fact that we have both *Acc-ing* and *Poss-ing*, as well as 'the mixed nominal.' This might be accounted for in part by the "gradualness" of syntactic change. The putative reanalysis is of the underlying rules of a competence grammar and is therefore highly idealized, while the process itself is slow, (for a discussion see Birnbaum 1984). Secondly, the proposed change itself posed new problems for learners, generating a further nest of ambiguity in *-ing* constructions in complement position. In this case, preservation of superficial differentiation of the constructions, for example by retaining transitional forms,

would be functionally beneficent. Also, the factivity of *Poss-ing*, as opposed to the more purely propositional mode of *Acc-ing*, functionally differentiates and serves to preserve the transitional form. And finally, as we shall see, the Middle English derived nominal changes in significant ways, so the old derived nominal is not in fact preserved.

The three requirements of Lightfoot's (1979: 129) transparency principle appear to be met. There is (1) initial markedness leading to opacity; (2) a set of simultaneous changes in surface structures; (3) the explanation of a seemingly unrelated set of facts in terms of a single reanalysis which removes the markedness in question (while creating others — a common feature of linguistic or any system-change).

We can thus give an explanation in historical terms of the *-ing* part of Ross' squish between nouniness and clausiness. If we add to this Lightfoot's (1979: 186-199) account of the reanalysis of the infinitive from NP to S<sup>1</sup>, we get quite a full historical explanation of the marked non-tensed part of the English complement system. It will be clear below that *Acc-ing* is a marked construction (see Reuland 1983) just as infinitives have marked properties such as S-deletion, Control PRO or variable 'for.' The outcomes of NP to complement sentence changes are marked, just as were the NPs, which were its source. As Lightfoot notes, "the infinitive was a regular NP except insofar as it did not occur with [Spec N]." This is the obverse of modern *Poss-ing*, which is regular S<sup>1</sup>, except that it occurs with a [Spec N]. *Acc-ing* can be seen as the increasing regularization of *Poss-ing* into a complement sentence somewhat resolving that markedness. Since the change in the infinitive also took place in the 16th century, one cannot help feeling there is some relationship between these reanalyses.

### 3.5 Evaluative Evidence

There is evaluative evidence that *Poss-ing* is socially the more conservative construction. The lower half of Figure 2 displays judgements noted in the literature both on perceived changes in frequency of the constructions and of their evaluative stratification. It is claimed, for example, that *Poss-ing* is more formal, *Acc-ing* more colloquial and that the former is preferred in the written language and the latter in the spoken (Huddleston 1984: 221; Quirk et al. 1972: 741; Kilby 1984: 140). Kilby notes that there is artificiality in the use of the orthographic 's.' For an historical discussion of evaluation by prescriptive grammarians see Visser (1966, sec.

1100: 1177-1179, sec. 1102: 1183; Visser 1973, sec. 2102: 2362f.). In some NP environments, for example, after prepositions, *Acc-ing* is more stigmatized than it is in others. The stylistic evaluation of variants is usually a symptom of change with the newer form being proscribed. The fact that for many regular plural nouns, the contrast is phonetically but not orthographically neutralized, makes prescription particularly possible for grammarians in this case, while at the same time favouring the spread of common case. The artificiality of lexical *Poss-ing* has a lot to do with its orthographic prominence and spoken invisibility.

As regards changes in frequency, the evidence is impressionistic but suggestive. The pattern seems to be for an increasing preference for *Acc-ing* at the expense of *Poss-ing* in most, but not all, environments. The increase in frequency is recent in historical terms. According to Jespersen (1954-1958, 5: 133, 136) the frequency of pronominal *Acc-ing* is recent. Similarly, Visser (1966, sec. 1100: 1177, sec. 1102: 1183) notes an increase in common and oblique case since the 19th century in both prepositional and complement environments, but not with all verbs (see Visser 1973, sec. 2102: 2362f.). The correlative of this is a decrease in use of *Poss-ing* except when the gerundive is in subject position (Wik, 1973: 139). Wik describes this decrease in use of sentential factive gerundive nominals expressing agent, time and voice as a possible "reversal of an earlier historical change." Vendler (1967: 51-52) also notes the relative decline of *Poss-ing*. On our hypothesis, this dispreference would be interpreted as a tendency towards the completion of the underlying reanalysis reflected in both stylistic and use preference, except in those environments where *Poss-ing* is distinctively functional or *Acc-ing* cannot appear for other reasons.

### 3.6 The Mixed Nominal

The variability of this form provided one source of the sentential reanalysis. But the emergence of the factive *Poss-ing* gerundive complement did not lead to the disappearance of the earlier construction. The reanalysis can be viewed as a projection of certain values of the earlier variable derived nominal into the complement system coalesced with a reinterpretation of the participial predicative accusative construction. The NP itself splits into a more clausal *Poss-ing* gerundive that can represent events factively, and the nominal form which represents actions. The subsequent development of the latter has been towards the disappearance

of its variability, that is, its regularization into NP form and its increasing marginality.

It is striking that since the mid to late 19th century, the determiner has required 'of' in standard English, and therefore has been excluded from *Poss-ing* except in the remaining marginal cases noted by Schachter, (7 a, b) above. Jespersen (1954-1958, 5: 97) writes, "After the definite article the 'of' construction has always been frequent: since the beginning of the 19th. c. it has been the construction required by native grammarians." Visser (1966, sec. 1125: 1210f.) notes that "after about 1900 the pattern with 'of' is practically the rule," except with a following reflexive. Both he and Wik (1973: 135) attribute the categorical nature of 'of-insertion' with the definite article today to prescriptive grammarians.

The upshot of this loss of variability is the change in grammaticality of certain marked NPs. As Wik says, "fewer surface structure alternatives are accepted today than in the eighteenth or nineteenth centuries." Such older forms as (20 a, b) would thus be ungrammatical today, although still occurring as 'relics' occasionally;

- (20) a. ?the arming the native chief (1876)  
 b. ?the getting him down again (1902)

Conversely, the is now incompatible with gerundive features such as aspect and voice,

- (21) \*. . . forgive the having been supplanted . . . (Dickens, *Dombey and Son*, cited in Wik, 1973: 138)

although Schachter's demonstratives and quantifiers remain (compare [7 a, b] with [8] above). The process of change has spawned many forms, such as the pre-head descriptive adverb with 'the' and 'of' as in Ben Jonson's (9) above, which are now ungrammatical.

The increasingly canonical NP form of the contemporary mixed nominal serves to distinguish it from *Poss-ing* on the one hand and to make it formally identical to other derived nominals on the other. This gives pairs such as;

- (22) a. The arriving of the train  
 b. The arrival of the train



In this context, the construction has been increasingly judged as marginal, (see, for example, Chomsky 1970: 215). Changes in the mixed nominal are correlative evidence for our hypothetical reanalysis.

### 3.7 An Alternative Source for *Acc-ing*

I have argued, following Jespersen, that gerundive *Acc-ing* is a development of *Poss-ing*. An alternative possibility is that forms in *-ing*, with their subjects in the accusative or common case and with eventive and act-descriptive interpretations, developed earlier and independently of *Poss-ing* from the participle based perception verb complements described in 3.2.5 above, as these expanded to mental verb environments. For all practical purposes, these can be construed as *Acc-ing* gerundives in such environments, see (11), (13b) above. In this case, the reanalysis of the early derived nominal which culminated in the 16th century emergence of the clausal *Poss-ing* gerundive is separate from but related to this development of *Acc-ing*. It is also possible that the appearance of 'common (that is accusative or nominative) case' in lexical nouns could, in fact, be nominative — the gerundive is perceived as sentence like. But, of course, nominative and accusative are homonyms, except in pronominal instances. But when pronouns do appear, it is the earlier accusative that dominates. (And, my previous analysis is backwards!) Both the constructions subsequently spread to the full range of nominal environments. This alternative hypothesis, in which common case *Acc-ing* precedes *Poss-ing* and has a separate source, would seem to have no analytical consequences, although it gives an alternative account of why we might have the two gerundives, with the common case form more clearly sentential and the genitive form more nominal. But, if this is true, why is pronominal *Acc-ing* so late?

## 4. FEATURE SOLUTIONS

Let us assume that there was a reanalysis of *-ing* in NP producing *Poss-ing* in the 16th century. Was the *-ing* in NP reanalyzed as a sentential complement or as NP/VP? The answer depends on possible parameter changes in universal grammar, since this is the only general constraint on change. More precisely, the question becomes whether we permit NP to dominate VP as a marked parameter. If we permit this and accept the range of analyses in Figure 1, then we can explain Analysis II as a marked

constituent structure, a diachronic transitional variant between Analyses III and I.

On the other hand, citing the reasons advanced in (2) above, we can rule such 'markedness' in categorical structure as impermissible. Therefore a transitional NP/VP form could not be licensed, even as a marked option in core grammar. In this case we would require another account of the *Poss-ing* reanalysis, which now must 'jump' from NP to a sentential complement; and we must also find another way of accounting for both the indubitable nominality of *Poss-ing* and the gradience of the constructions. A solution to this diachronic problem will perhaps illuminate the outer limits of permitted marked variation of parameters in core grammar.

We could argue that much of the *Poss-ing* phenomenon does not belong in core grammar at all. We could relegate it to the periphery. Chomsky (1981a: 126f.) notes that the actual grammar possessed by a speaker will not be simply one of the class of core grammars. The actual grammar will be "... a core grammar with a periphery of marked elements and constructions." This may be relevant here since we have argued that many of the analytic problems with gerundive constructions are the result of diachronic processes. We would expect to find "historical residues." Thus, Analysis II may be a marked peripheral construction. Certainly there are some forms such as Ben Jonson's (9) above which belong there. Perhaps, this is where we could place Schachter's examples (7 a, b). Moreover, the periphery may be systematic and have a social and historical structure related to but outside the system of core grammars; to be treated by "devices such as relaxing certain conditions on core grammar, processes of analogy . . . and so on." This almost perfectly describes the category switching scheme required for Analysis II of *Poss-ing* and the evaluative and historical data. In other words, the NP/VP structure is a valid account, but outside the system of core grammar.

I will in fact argue for another alternative, a feature solution. This will exclude Jackendoff's category switching schema as possible analysis, by hypothesis. Nevertheless, I will include *Poss-ing* as relevant data for a grammar. Therefore, we need an analysis in which the diachronic reanalysis that results in *Poss-ing* 'jumps' from NP to complement sentence. That is, by hypothesis, *Acc-ing*, *Poss-ing* and *PRO-ing* are a single sentential complement in core grammar. We are looking for some underlying set of properties of sentential *-ing* complements which would give them the disposition to behave sometimes more clausally and sometimes more nominally.

The most direct device for such cross-classification of properties is

not a mixed constituent structure but a feature matrix (Chomsky 1965: 82, 1970: 207-208). My original notion in 1978 (see endnote 1) was that the feature based systemic generative grammar, in which structure was built as realizations of underlying feature representations naturally permitted cross-classification, was the most appropriate model for *-ing* gradience (Hudson 1971). But analogous concepts are available in GB theory. Indeed, lexical and phrasal categories can be eliminated in the sense that they can be viewed as complexes of features e.g. [+/-N], [+/-V]. Although both categories and features can be viewed as abstractions from classification (categories) and cross-classification (features), in explanatory terms features can also be interpreted as 'inherent properties' of items which account for their dispositions. They represent the item's 'causal powers.' A matrix of distinctive features can in principle produce the blend of dispositions characteristic of *Poss-ing*. This will clearly have a feature representing its nominality combined with some representation of its sentence-like properties. One hypothesis is that *Acc-ing*, *PRO-ing* and *Poss-ing* are sentential complements differentiated by marking of features in the category INFLECTION, henceforth INFL (see Chomsky 1981: 18f.).

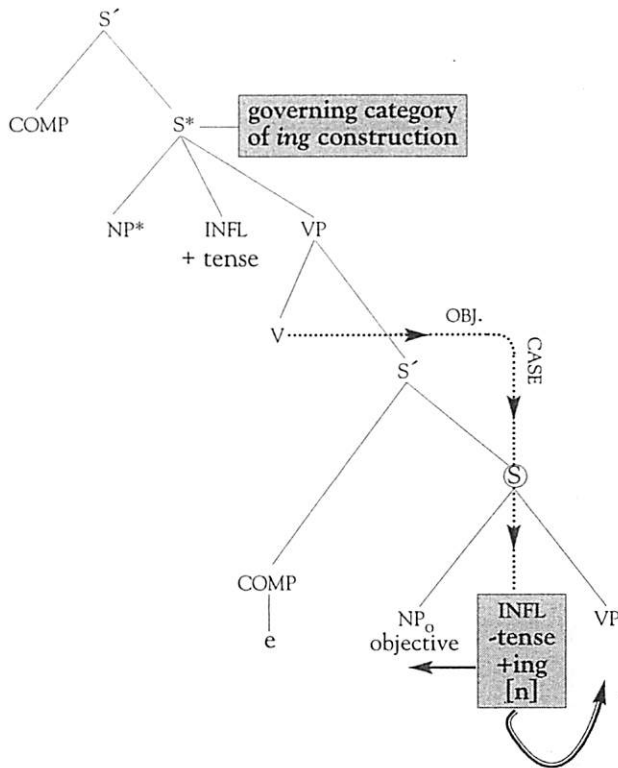
#### 4.1 Reuland's Analysis of *Acc-ing*

Reuland's (1983) analysis of *Acc-ing* illustrated in Figure 3 (next page) gives us a starting point for treating both *Acc-ing* and *Poss-ing* as sentential. This can be achieved by adjusting various parameters of INFL, the inflectional component of AUX, in different ways which explain the two forms. The basic insight is that although the constructions are sentences, they contain a nominal element which affects their distribution and behaviour.

Reuland restricts his proposals to *Acc-ing*, (which he terms NP-*ing* constructions). In Figure 3, INFL contains a nominal feature, [+ing][n], which is distinct from, but governs like pronominal AGR, the agreement node in finite sentences. The nominal feature [+ing] is distinguished from participial *-ing* and gains its nominal properties, by virtue of the following generalizations. First,

- G1. *-ing* is participial only if its domain is governed by NP or VP.

This first generalization serves to identify the basically modifying distribution of participial *-ing* constructions. The nominal *-ing* constructions, by contrast, are identified under:



- PARAMETERS OF INFL. containing [+ing] [n]
- i Absorbs external government
  - ii Transmits government and assigns case of Matrix V = Obj. to NP<sub>o</sub>.
  - iii [+ing][n] is not co-indexed with subject NP<sub>o</sub>.
  - iv [+ing][n] is NOT SUBJECT, NP<sub>o</sub> is SUBJECT.
  - v If R = Affix-Hopping applies, NP<sub>o</sub> is ungoverned.

FIGURE 3  
Reuland's Analysis of the Acc-ing Gerundive, (1983).

.....> objective case  
 =====> application of R = Affix-Hopping.

G2. The domain of *-ing* is governed by a Case assigner.

Clausal nominal *-ing* complements are identified by:

G3. *-ing* can be nominal only if it is in a Case position.

To complete the account, a means is provided whereby the subject of *-ing* is assigned objective or common case. This is accomplished by treating the nominal *-ing* as similar to, but not identical with, the finite agreement element AGR. In tensed clauses AGR is the governing element in AGR and assigns nominative case to the subject in the environment [+tense]. In [-tense] clauses with the feature [+ing] [n],

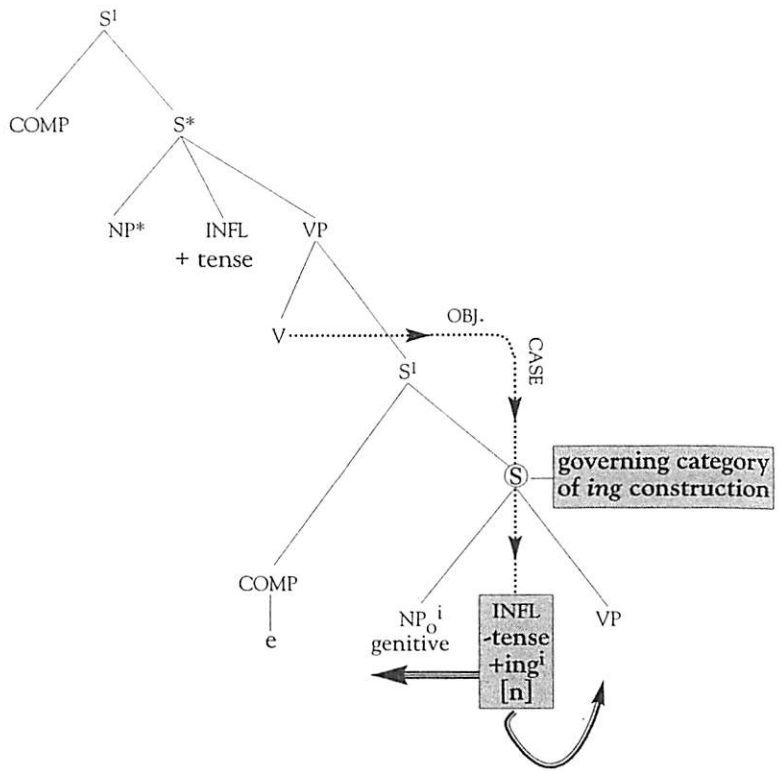
G4. Nominal *-ing* governs like AGR.

The properties of INFL containing [+ing][n] are listed in i-iv in Figure 3. It absorbs and transmits government, and therefore permits the matrix verb to assign objective case to the subject of *Acc-ing* (i-ii). Control PRO occurs when the subject position becomes ungoverned due to the application of R (or Affix Hopping) to INFL (v). PRO is controlled because it is not co-indexed with the nominal [+ing][n] feature of INFL, (iii). Also, Since [+ing][n] is not pronominal, it is also not SUBJECT, (iv), the most prominent nominal, and the asterisked matrix S\* in Figure 3 is the governing category of the *Acc-ing* construction's subject position with respect to binding.

#### 4.2 Extension of the Analysis to *Poss-ing*

Figure 4 (next page) illustrates my tentative proposal for a sentential + feature analysis of the *Poss-ing* gerundive.

G1-G4 obtain as for *Acc-ing*. Again, INFL contains the nominal feature [+ing][n] which governs like pronominal AGR. However, by adjusting the properties i-v of INFL, the differences between the two nominal *-ing* complements can be predicted for certain central areas of the grammar. The adjustments proposed emphasize the nominal nature of the [+ing][n] feature in INFL. Thus, in this case, [+ing][n], although it absorbs, does not transmit external government. Instead, it assigns genitive case to the subject by virtue of its nominal nature. In both these respects [+ing][n] is making the complement behave as an NP. Likewise under setting (iv) in Figure 4, [+ing][n] is co-indexed with the subject NP and therefore control PRO is excluded from this position when R applies. Furthermore, under (v), in *Poss-ing*, INFL is itself the most prominent nominal and is therefore SUBJECT, behaving in this respect like pronominal AGR and making *Poss-ing* more like a finite complement than *Acc-ing* in this respect.



- PARAMETERS OF INFL. containing [+ing] [n]
- i Absorbs external government.
  - ii Does not transmit government.
  - iii Assigns genitive case because of its nominal nature.
  - iv [+ing][n] is co-indexed with subject NP and therefore NO control PRO when R applies.
  - v [+ing][n] is SUBJECT, NP<sub>o</sub> is subject.

FIGURE 4  
Proposed Analysis of the *Poss-ing* Gerundive.

- .....> objective case
- ====> genitive case
- ====> application of R = Affix-Hopping.

There is some collateral evidence for this last contrast. In *Acc-ing*, the accusative NP is the most prominent nominal. In *Poss-ing* it is the inflectional component containing [+ing][n] which is the most prominent nominal element. Now, Curme (1931: 488), Jespersen (1954-1958, 5:

133-134), and Visser (1973, sec. 2102: 2363) all note that when the subject NP is contrastive, whether lexical or pronominal, it is the accusative form that is used. The converse of this is that when the action itself is communicatively highlighted over the agency, then the genitive is preferred. Visser writes,

it may be conjectured that 'his' is preferred when for the speaker the action referred to by the *-ing* is the central part of the topic, whereas with 'him' there is no discrimination in this respect between person and action . . .

If [+ing][n] is SUBJECT in *Poss-ing*, then the complement sentence itself, the circled S in Figure 4, is the governing category for the initial NP position in *Poss-ing*.

The fundamental claim I am making is that the relation between the two constructions can be viewed in terms of parametric variation of the complex symbol INFL with respect to (i) absorption of external government, (ii) case assignment — whether INFL transmits the absorbed case or not, (iii) SUBJECT characteristics of nominal *-ing* and (iv) co-indexing. The relation between nominal *-ing* sentential complements, those that satisfy G 2-4 above, is stated in terms of the settings of the feature complex of INFL while G 2-4 represents the essential nominality of both these sentential complement types, as opposed to participial *-ing* specified by G 1, and the mixed nominal which is N. To generalize this proposal to the whole complement system, we could suggest that the relation between sentential complements is a question of the settings on a matrix of properties in COMP-INFL. The historical newcomers, the infinitive and nominal [+ing][n] complements which are at the less clause-like end of the scale are the marked options in this system. This approach is implicitly adopted by Reuland (1983: 124f.) when he proposes that the nominative case subject which occurs in the ungoverned nominative absolute *-ing* construction such as,

- (23) The Benbergs stood by, he clasping his hands and  
watching her closely

is treated as containing AGR which therefore assigns nominative in the normal way.

#### 4.2.1 Genitive Case

The proposed analysis of *Poss-ing* in which INFL, which governs like AGR, contains the nominal element, [+ing][n], and governs the subject of *Poss-ing*, is clearly isomorphic with the [NP N]NP structure which triggers genitive case assignment in NP. One motivation for assigning genitive by an arbitrary assignment rule, instead of in a more intuitive manner as a function of government by a case-assigner, was the NP/VP analysis for the gerund (Analysis II in Figure 1). Thus, while the genitive NP in non-gerundive NPs is governed by N, the subject NP in Analysis II is ungoverned. When we now reject Analysis II, both kinds of genitive NP and their respective governors are dominated by maximal projections, if the S-system (now I-system) is a projection of INFL (Chomsky 1981: 164). In Analysis II, by contrast, the V which was the head of the maximal projection VP did not govern the subject NP. We are in a position now for a uniform account of genitive case assignment as a result of the government of an NP by a nominal element which assigns genitive to an NP which it governs. As noted above, the only circumstances in which the subject NP of gerundives is ungoverned is through the application of R. The parameter which allows genitive to be assigned in complement sentences where INFL is the nominal element [+ing][n] is that of transmission of government as a feature of INFL. If the transmission of external government is fixed negatively, as it is in *Poss-ing*, then INFL governs as a nominal when [+ing][n] is present.

The nominality of the *Poss-ing* gerundive and its genitive subject is thus fundamentally a reflex of the nominal dimension of the *-ing* affix, historically resonating through the reanalysis.

#### 5. MILSARK'S FEATURE SOLUTION

Solutions with something of the same flavour have been recently proposed by Baker (1985) and Milsark (1988), developing proposals of Stowell's (1981) that gerundives are underlying complement sentences, whose NP behaviour can be accounted for in terms of features which require them to appear in cased positions.

Milsark (1988: 611) makes the claim that observed syntactic markedness and variation ultimately originates in morpholexical idiosyncrasy, as it interacts with general principles of universal grammar. (This is indeed plausible since the lexicon is the module of the irregular.) In the case of



the gerundive, its syntactic ambivalence is located in the feature structure of a single *-ing* derivational affix, which is unspecified as to the values of the categorical features [V] and [N]. The various types of *-ing* structures result from the feature combinations which are possible when *-ing* has been suffixed to verbs. The sentential gerundives are produced by the insertion of *-ing*, with its lexical category indeterminate as between [+/-N] and [+/-V] into INFL in a complement sentence. Subsequently *-ing* is adjoined to V, as in the rule R above. At Phonetic Form (PF), category assumption by the verb+*ing* is free for some combination of [+/-N] and [+/-V]. The choices [+N, -V] leads to recategorization as noun producing a structure as in Figure 5 (Milsark 1988: 623).

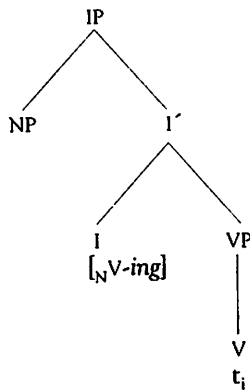


FIGURE 5  
(from Milsark 1988)

Case assignment applies at PF. The verb assigns case within the complement S before recategorization, and case is assigned to the whole gerundive from the matrix S. The Strong Case Filter requires that all nominally recategorized gerundives be in case positions and this accounts for the NP distribution of the construction. The above configuration also accounts for the alternation of PRO and genitive subjects in a proposal not dissimilar to that in 4.2.1 above.

## 6. FUNCTIONAL SPECULATIONS

Milsark's proposals locate syntactic markedness and variation in the feature indeterminacy of the *-ing* affix. My proposal also locates it in the

nominality of [+ing][n] as it affects parameters of INFL. But whether either of these analyses as they interact with UG principles can account for the whole range of data is doubtful, if we remember that the data includes mere tendencies, highly eccentric and restricted constructions and plasticity of judgment. Such 'more or less' data suggests that there may be pragmatic factors on the periphery which interact with feature indeterminacy and UG, as might be expected given the historical dimension.

In the diachronic analysis in 3. above, I suggested that sentential gerundives, especially *Poss-ing*, were the result of a reanalysis due to the opacity of the derived nominal in *-ing*, once clausal properties appeared, (originating by analogy with various predicative accusative/participial constructions). How can this be related to Milsark's analysis?

Today the open category specification which is the idiosyncratic property of the *V-ing* suffix suggests it could function as the head of any projection. Before the reanalysis, the nominal *-ing* [+N-V] would be the head of NP, while a separate participial *-ing* [+N+V] would attach to verbs with respect to participles, with their adjectival distribution, and as aspect markers of verbs [-N+V] with regards the progressive. The reanalysis would involve the first appearance of nominal *-ing* in INFL with the settings [+N-V], preserving its nominality. At this point the *-ing* morpheme becomes completely unspecified i.e. [+N-V] = nominal or [-N+V] = verbal or [+N+V]=adjectival. Perhaps also at this point it becomes possible to speak synchronically of one single conflated *-ing* suffix, without category specification, coming about through analogy and correlating diachronically with a set of distinctions (which persist synchronically), contrastively making available nominal (event) and sentential (fact) representations of the same state of affairs (see below). The analogy brings together sound, syntax and semantics/pragmatics. As a consequence, any predicate represented by any verb can be freely projected on to any licensed NP or S structure, subject only to the constraints of UG.

So we must add to Milsark's point, that such synchronic morpholexical peculiarity doesn't appear without a reason. It didn't arbitrarily become a property of the *-ing* suffix out of the blue. Rather it has diachronic, perceptual and pragmatic origins, which are connected with taking one whole constructional — and maybe 'logical' — type as an analog for another, (see below). The clause became an 'analog model' (Black 1962) for a construction with a nominal head. The peculiarity of the *-ing* suffix is as a performance or perceptual trigger to this process of S/NP mapping (made possible by 'projection' in UG) which has been happening for centuries

and which is continuing synchronically. To talk of 'an English construction' is simply to stabilize, or recognize a stability in, and then represent this process. One way is as a feature complex on *-ing*. The gerundives are thus truly 'grammatical metaphors' (Halliday 1994: 352f.), if we explain metaphor as a case of analogical thought of this type. (Note also that modern theories of analogy offer opportunities for historical linguistics; see Black 1962, 1979; Ortony 1979; Vosniadou and Ortony 1989.)

Since we are dealing with analogy or metaphor we are in the realm of pragmatics. Historically 'deviant' utterances must have occurred on the periphery of the grammar in which *-ing* in nominals [+N-V] were given, or were perceived as having sentential properties. I will conclude with some speculations on this theme.

Let us imagine the two semantic poles which correspond to either end of the syntactic scale in Table 1, with 'that' complements at one pole and derived nominalizations at the other. At the former pole there is a fairly transparent relationship between the sentence syntax and a propositional representation. The latter end is much more problematic.

The semantics of nominalizations is mysterious and perhaps involves 'events' as a logical primitive (Reichenbach 1947; Davidson 1982). As logical forms, events are interpretable as reifications of states of affairs. Indeed, Reichenbach (1947: 272) considers such entities as having "the physical existence of things." One could argue that the eventive nature of such representations only pragmatically 'present' states of affairs as analogs of things — as if they were logical individuals — using the machinery of definite reference to this end. This is what creates a certain looseness of interpretative possibility which varies according to the containing verb and context (Vendler 1967). At some level we know that the event is only being 'treated' as an individual thing.<sup>1</sup>

The effect of this is well captured by Davidson (1982: 162):

... there is an important difference explaining the fact that there was an explosion in the broom closet and explaining

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1. I am suggesting that the interpretation of nominalizations is largely Pragmatic. They are only analogs of referring expressions. Thus, their logical form will be like those of the corresponding sentences in terms of truth conditions. This simplifies their treatment. It also accounts for the implicature-like contextual effects of the various types of nominalizations e.g. the 'aspectual flavour' of the *-ing* suffix. Presumably, some of the implicatures are 'conventional,' some are 'generalized'; in other cases the stylistic use of nominalization may involve 'conversational' implicatures.

the occurrence of the explosion in the broom closet. Explanation of the second sort touches the particular event as closely as language can touch any particular.

As Vendler (1967) points out, events happen or occur but aren't true or false. Only a representation (a proposition or statement of it) can have a truth value. We can't say that 'the explosion in the broom closet' is 'true' or 'false.' All we can do is presuppose that it 'occurred' through the use of 'the.' Nominalizations, especially the mixed or action nominal, are this kind of analog referring expressions. This property is clearest when the matrix verb is a 'tight' container (Vendler 1967), i.e. verbs of perception or occurrence or adjectives of physical manner. It is worth noting that action nominals can also appear in 'loose' containers, like 'remember,' and when they do they are paraphrases of sentential gerundives, as in (24) below, but with slightly different contextual effects of a subtle stylistic flavour.

At the other end of the scale, representation is overtly representational. It is transparent that a state of affairs is being represented in language. An individual is not being referred to. The sentence/clause is the syntactic form that is transparently representational of states of affairs. Its propositional form just is this relationship between states of affairs and truth values. If true, the proposition represents a fact. (And of course a fact is just an event whose linguistic representation is true.) By definition, we have propositional attitudes to such representations. And sentences/clauses have devices, such as modals, adverbials, tense and aspect which can be used to modulate the statement of facts, which are unavailable to the presentation of the same states of affairs as reified events. Conversely, the reification touches or presents them with its own particular effects, for example, as perceptually immediate, unified individual entities, occurrences, or as things which can be manipulated. These two poles might be thought of as distinct 'language games' in Wittgenstein's sense.

We can now speculate that a motivation for the development of the sentential gerundive forms is that they can more or less introduce eventive properties into the representation of facts and conversely can more or less introduce sentence properties, especially aspectual ones, into eventive reifications. For example, an event loses something of its thinghood and gains aspectual and adverbial dynamism. Contrast;

- (24) a. (We remembered) his beautiful playing of Bach.  
b. (We remembered) his playing Bach beautifully.  
c. (We remembered) that he played Bach beautifully.

The intuition that *-ing* constructions have an aspectual on-goingness as a stylistic effect, which becomes especially noticeable if the form is frequent in a text, argues for an analogical relation between aspectual *-ing* and implications of the gerundive. On the other hand, the fact paraphrase and factive presupposition of the *Poss-ing* construction (24b) demonstrates that a state of affairs is represented as true by a speaker. It is therefore overtly propositional, and not an event, although compared to (24c) it has an event flavour close to that of (24a). It is possible that the tendency of *Poss-ing* gerundives to appear with factive predicates is the propositional correlate of the occurrence presupposition that accompanies the use of the mixed nominal which is its source.

Since these discourse properties are subtle impressions or tendencies, it is clear they are pragmatic and have stylistic effects. They must be combined as well with evaluative judgements to do with correctness, formality or appropriateness to a written register, which are sociolinguistic in nature. They may also, however, offer us a functional account of the use and stabilization of the phonetic *-ing* analogies, that led to its unspecified nature with respect to nominal and verbal properties, and still maintain the distinctions.



APPENDIX  
 Relativity of solutions to available theory

	GERUNDIVE action or mixed nom.	GERUNDIVE Poss-ing	GERUNDIVE Acc-ing	
	$S \Rightarrow T_{nom} \Rightarrow NP$	$S^{[NP VP]} \Rightarrow T_{nom. NP [-ing VP]}$	V NP Comp.	
1.	Lees (1960)	S T <sub>nom.</sub>	S T <sub>nom. OBJ opt.</sub>	
TRANSFORMATIONAL	Rosenbaum (1967)		NP <sup>[det N S]</sup> T <sub>COMP.</sub>	
	Emonds (1970)		NP [S]	
	Chomsky (1970)	N <sup>~</sup>	S T $\Rightarrow$	
	Fraser/Newmeyer (1970)	NP <sup>[det N S]</sup> T $\Rightarrow$ + ACT		
	Kiparsky & Kiparsky (1970)		NP [Fact S] T $\Rightarrow$	
	Wasow & Roeper (1972)	nominal gerund NP	verbal gerund S	
	Ross (1973)	categories are squishy or non-discrete $\pm$ nouniness		
2.	Williams (1975)		small clause S	
CATEGORICAL	Horn (1975)	N <sup>~</sup> [...N']	N <sup>~</sup> [...V'] S'	
	Schachter (1976)	presumably NP	NP [NOM, VP] S	
	Akmajian (1977)		PPVC NP [NP VP] S' <sup>indirect perception*</sup>	
	Chomsky (1981)		NP [NP VP]	
	Declerck (1982)		NP [S]* S' VP [NPA]	
	Williams (1983)		NP [...VP]	
	Binkert (1984)		N <sup>~</sup> [N' [V']]	
	Radford (1984)		NP [NP VP]	
	3.	Reuland (1983)		NP S' [ing] in INFL
FEATURE UG +	Baker (1985)		S' -ing nominal feature in INFL > recategorization.	
	Milsark (1988)		IP -ing unspecified [ $\pm$ N] [ $\pm$ V] in INFL > recategorization.	

\*Participial Perception Verb Compl.

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