A NON-UNIFIED TREATMENT OF -ING

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0. Introduction

In this paper, I argue that there are two morphemes in English with the phonological shape -ing. Assuming the treatment of -en that I have proposed in earlier work (Cowper 1994b, 1993), the existence of two -ing morphemes predicts that there ought to be six distinct surface manifestations of -ing. I will show that all six of these possibilities are attested in English.

1. Background and Assumptions

1.1 The Strong Monosemy Hypothesis

I take as a point of departure the assumption that morpheme-level lexical entries are strictly monosemous. This means that there can be no disjunctions and no optional elements in the lexical conceptual structure associated with a morpheme. It also means that there can be no unmotivated duplication of lexical entries. It is far from an easy task to determine what would constitute a motivated duplication of a lexical entry, but it is also clear that simply sharing phonological shape is not a sufficient condition for two morphemes being one and the same. One criterion which seems plausible is that of categorial identity. Thus it is licit to claim that bear (n., fur-bearing animal) and bear (v., carry, put up with, etc.) are distinct morphemes. It is less obvious that bear (carry) and bear (put up with) can reasonably be distinguished. I will argue here that there are two -ing morphemes, and that these two morphemes belong to different syntactic categories.

1.2 The Analysis of -en

Since the analysis of -ing is modelled closely on that of -en, I will briefly outline the major characteristics of that analysis. Arguments are given in Cowper (1993).

There is a single morpheme -en in English. It is a non-finite past tense morpheme, lexically specified as a suffix attaching to verbs. If its complement can be temporally referential, -en places that complement earlier in time than the time of the governing verb. -en also requires Case and a θ-role. There are three ways in which it can be affixed, which give three different clusters of properties.

First, -en can head a TP in the syntax and take a full VP as its complement. This is the English perfect construction. -en does not L-mark its complement. The relevant d-structure is given in (1).
In (1), -en receives Case and a θ-role by virtue of being the head of the internal argument of the higher verb have. Have assigns both Case and θ-role to the TP headed by -en. Since the complement of -en is a complete functional complex denoting an event, it can be temporally referential, and -en therefore places the event [PRO watch the movie] earlier in time than the time associated with have.

A second mode of affixation involves d-structure head-adjunction. Here, a structure appears at d-structure which is essentially identical (apart from traces) to the structure derived by head-movement. The structure is sublexical, in that the dominating node is X°, but it is nonetheless syntactically transparent. This is the passive construction, whose d-structure is shown in (2).

Here, -en receives Case and the external θ-role directly from the verb alter. The internal θ-role percolates to the higher T, and is assigned to the jacket. The jacket still needs Case, however, and must move in order to receive it. How far it moves depends entirely on what the higher verb is. If the higher verb is a Case-assigner like have, want, or see, then the jacket needs to move only as far as spec/T, giving sentences like those in (3).

If, on the other hand, the higher verb is a non-case-assigner like be, then the object must move all the way to matrix subject position, as in (4).
(4) The jacket was altered.

In this construction, the complement of -en is not an event, but a verb, which cannot be temporally referential. -en therefore has no temporal effect in the passive. In addition, its inability to L-mark its complement does not block the movement of the object noun phrase, since the object noun phrase is not contained within the complement of -en.

The third way in which -en may be affixed is in the morphological component. The result of this derivation is a syntactically opaque word, whose structure conforms, not to the principles of syntax, but to the principles of morphology. In particular, the category of the derived word is determined by percolation of category features. The result in this case is an adjective. This gives the so-called adjectival, or stative passive, illustrated in (5).

(5) a. An altered state of mind.
b. The children were very frightened.

1.3 A Previous Analysis of Progressive -ing

In Cowper (1991a), I developed an analysis of the English progressive construction. This included a proposal as to the lexical properties of the present participial affix -ing, as follows.

-Ing was treated as a non-finite present tense morpheme -- in fact the present counterpart of -en. It did not require Case, but did require a θ-role. If its complement was temporally referential, then -ing placed it simultaneously with the time associated with the governing verb. -Ing also placed a temporal selectional restriction on its complement, forcing it to extend over an interval of time rather than a point. Since -ing selected for properties of its complement, it also L-marked its complement. This meant that Α-movement out of the VP governed by -ing was possible. -Ing appeared in d-structures like the one in (6).

(6)  

```
      VP
       \  
        V'

      V

      TP

      --

      T'

      T

      VP

      \  
      -ing

      DP

      Anna

      V

      \  
      read

      the book
```

Here, read assigned its θ-roles and its Case in the normal way. The higher verb assigned a θ-role to the TP headed by -ing, thus satisfying -ing's need for a θ-role. Anna lacked Case, and therefore had to move. How far it moved depended on the higher verb. If the higher verb was a Case-assigner like see or want, then Anna moved only as far as the TP-specifier. If the higher verb was a non-Case-assigner like be, then Anna moved to subject position in the higher VP. The results are shown in (7)
(7)  a. We saw Anna reading the book.
b. I want the children sleeping when I arrive.
c. The children were sleeping.

While I will retain the essential characteristics of this treatment of progressive -ing, problems arise when we attempt to extend the analysis to cover all the constructions in which -ing appears. The theory developed on the basis of -en predicts that if there is a single morpheme -ing in English, there ought to be no more than three clusters of properties, corresponding to the three structures available. However, it appears that there are considerably more than three clusters of properties.

2. Data and Observations

Constructions with -ing can be divided into two main groups: those in which the verb bearing the -ing must denote an interval rather than a point in time, and those in which the verb can denote either an interval or a point, depending on other factors within the VP. I will provisionally refer to these two types as progressive and non-progressive -ing. We now turn to progressive -ing.

2.1 Constructions Involving Progressive -ing

Several of these constructions fit immediately into the analysis of the present participle just discussed. These are listed in (8).

(8)  a. be+ing: Sue is watching the movie.
b. acc+ing: We saw Sue watching the movie
c. appositive -ing: Sue having lost the race, Mr. Jones left the stadium.\(^1\)
d. while-ing: While PRO watching the movie, we ate excessive amounts of popcorn.

Sentences like (8d) have been discussed by Steuart (1992), who argues that while is a complementizer, and that -ing is indeed progressive.

Walker (1992) discusses sentences like those in (9), which appear to differ in structure from the sentences in (8).

(9)  a. The children went fishing.
b. Sophie wants to go drinking.

She notes that even if the -ing verb is transitive, it cannot appear with an object NP. The only way an object can appear is if it is incorporated, as in (10).

(10)  a. The boys went mountain-climbing/*climbing a mountain.
b. I’ve never gone girl-watching/*watching girls.

There are many interesting thematic, semantic, and even cultural restrictions on this construction, but for the moment we will simply point out that this appears to be an instance of progressive -ing which differs systematically from the straightforward cases in (8).

Progressive -ing also appears to derive adjectives, as shown in (11).

\(^1\) I have no new insights on how Sue receives Case in this sentence.
(11) a. The giggling children were escorted from the theatre.
b. The flashing light frightened the dogs.

We can see from (11b) that we are indeed dealing with progressive -ing: this sentence cannot mean that the light flashed only once, in a punctual way. However, again the structure appears to differ from the easy cases.

If these three construction types were all there was to -ing, then the analysis would be relatively straightforward. However, there are a number of other constructions in which -ing appears.

2.2 Distribution of Non-progressive -ing

The next set of data involve non-progressive -ing. There is no necessity in any of these sentences for an otherwise punctual event to denote an interval of time. These data differ in other ways from sentences with progressive -ing, as we shall see.

The sentences in (12) have an embedded clause headed by -ing, with a PRO subject. Some are arguments of higher verbs, while some are in adjunct PP’s.

(12) a. The children prefer PRO eating in front of the TV.
b. I just hate PRO arriving early at a party.
c. The chairman recommends PRO voting against the motion.
d. PRO kicking a steel door is just plain stupid.
e. Bert scolded Ernie for PRO teasing Big Bird.
f. After PRO tripping on the starting line, the racer never had a chance.
g. Ruthie fooled Judith by PRO hiding the cookies.

In the PP-adjunct cases, illustrated in (12e)-(12g), Steuart (1992) argues that -ing is non-progressive, since the events denoted by the adjunct clauses are punctual.

Another place where we find non-progressive -ing is in the so-called poss-ing construction, illustrated in (14).

(14) a. We resented his taking the car.
b. Mary’s forgetting her hat amazed everyone.
c. Ruthie’s hiding the cookies was rather clever.

There is also a non-progressive version of the acc-ing construction but unlike progressive acc-ing, this one is usually judged to be of a slightly lower register. Compare the sentences in (15) with the acc-ing example in (8b).

(15) a. We resented him taking the car.
b. I prefer the children eating healthy food.
c. Ruthie appreciated Judith bringing her a glass of water.

Non-progressive -ing also derives two kinds of nominals: process and result nominals. Process nominals, while their name might suggest that they are progressive, in fact are not. The sentences in (16) illustrate process nominals, and (16b) shows that the event denoted by a process nominal can be punctual.

(16) a. The eating of candy is prohibited in the library.
b. The firing of Mary’s favourite assistant sparked a revolt among the staff.

Result nominals, unlike process nominals, readily appear in the plural, and frequently exhibit the semantic accretions typical of lexicalized forms. These forms do
not take object noun phrases with of the way process nominals do. Some examples are given in (17).

(17) a. The hearings (*of the case) lasted two months.
    b. The firings (*of junior employees) illustrate just how callous the boss can be.

3. Analysis

I will first present an analysis of progressive -ing, and then turn to non-progressive -ing.

3.1 Progressive -ing

I assume that the analysis developed in Cowper (1991a) for the progressive tense in English is basically correct. I therefore assume that -ing is a non-finite present tense morpheme, which requires a θ-role but no Case\(^2\), and which requires that its complement extend over an interval of time. It L-marks its complement and if the complement is temporally referential, -ing places it at the same time as the time associated with the governing verb. As with -en, there are three structures in which such an affix could appear.

The first structure is the one discussed earlier, where -ing takes an entire VP as its complement. The d-structure in (6) is repeated here as (18).

\[\text{(18)}\]

```
(18)     V' 
          V  /\  
            \  /  
            T'  /  
              \  /  
              T  \  /  
                \  /  
                ing \  /  
                  \  /  
                  DP \  /  
                    \  /  
                    Anna \  /  
                      \  /  
                      read \  /  
                        \  /  
                        the book
```

The verb read assigns both of its θ-roles and its Case feature within VP. Since the complement of -ing is a full VP, it can be temporally referential and -ing situates it at the same time as the time of the governing verb. The noun phrase in the specifier position of VP moves so as to receive Case, either in the specifier position of TP if the governing verb is a Case-assigner, or in the higher subject position if the governing verb does not assign Case. This structure is what we have in the be-ing and acc-ing constructions.

The second structure that the theory provides for progressive -ing is shown in (19).

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\(^2\) It remains a stipulation that -en requires case while -ing does not. I leave the explanation for this for future work.
Here, it is reasonable to suppose that the θ-role required by -ing will be supplied by the adjoined verb, just as in the passive -en absorbs a θ-role from the adjoined verb. While it remains a stipulation that -en absorbs the external θ-role, if -ing also absorbs the external θ-role there is hope that a generalization may eventually be captured about absorption of θ-roles by tense affixes. While there is no evidence that -ing requires Case, it is not implausible that it will interfere in a purely structural way with the assignment of object Case by the adjoined verb.

The go verb-ing construction, discussed by Walker (1992), seems to exhibit the expected properties. The external argument of the participial verb is suppressed, and the direct object can only appear in an incorporated position. The participial verb must denote an interval rather than a moment in time. What is interesting here is that there appears to be only one event denoted by the entire construction. There is no way in which the going event can be temporally distinct from the event denoted by the participle. This follows automatically if the lower verb does not head its own VP, and therefore does not denote an event capable of being situated on the time line.

There are several loose ends with this construction, which I will not attempt to deal with here. The most troublesome is the question of why there could not be a direct object noun phrase which moves in order to get Case. While the verb go does not provide a position in which an object could get Case, the verb be would provide such a position. We must therefore seek to explain why there is no passive version of -ing, just as there is a passive version of -en? I leave this and other questions about the go verb-ing construction open.

The third possibility for progressive -ing is that it best affixed in the morphological component, giving a syntactically opaque word. If we assume that progressive -ing bears the same category features as the past participial suffix -en, then we would expect morphological affixation of -ing to derive the same category as does the morphological affixation of -en. This means that progressive -ing should produce an adjective when affixed in the morphology. Extending the analogy, we might expect that the derived adjective would have a stative rather than an eventive reading, and that it would assign neither Case nor θ-roles. This seems to be a fairly accurate description of adjectival -ing.

The foregoing exhausts the list of progressive -ing constructions. I conclude that progressive -ing is indeed the present tense counterpart of -en, and that it exhibits the same three instantiations as -en does. We now turn to the other constructions with -ing.

3.2 Non-progressive -ing

It must be shown that the remaining -ing constructions are truly non-progressive. In other words, the verb that -ing attaches to must be able to denote a point, rather than an interval in time. If it can, then the -ing involved in these constructions must indeed be a different morpheme, since progressive -ing's selectional requirements are extremely robust.
The sentences in (20) illustrate the temporal effect of progressive -ing. In (20a), the light may have blinked only once, but in (20b), the light must have blinked repeatedly, (or alternatively the light took an inordinate amount of time to complete a single blink).

(20)  a. I saw the light blink  
    b. I saw the light blinking

In (21) I have given examples of the various constructions with non-progressive -ing. In each case the verb in the -ing form is one that normally denotes a punctual event. Notice that in none of the cases is a repeated reading required.

(21)  a. I would prefer PRO leaving early this evening. (PRO+ING)  
    b. We broke the plate by PRO dropping it on the floor. (PRO+ING, PP ADJUNCT)  
    c. Mary’s forgetting her hat amazed everyone. (POSS-ING)  
    d. Judith resented Annie taking the car. (NON-PROGRESSIVE ACC-ING)  
    e. The dropping of the plate awoke Mr. Smith. (PROCESS NOMINAL -ING)  
    f. The firings were a total shock to the staff. (RESULT NOMINAL -ING)

The existence of nominal -ing provides another piece of evidence for a second morpheme. If -ing nominals are morphologically derived, and if there were only one -ing morpheme, then there would have to be some way for the same affix to attach to the same stem in the same way on two different occasions, and derive two different words. Aside from the implausibility of this scenario, it raises the question of why there are no -en nominals in English. If -ing can behave in this non-deterministic way, then given the strong similarity between -en and -ing, we would certainly expect the same of -en.

Since non-progressive -ing derives a noun when affixed in the morphology, it seems safe to assume that it belongs to some nominal category. It need not be a noun, however, since we saw with progressive -ing that a functional head (T), when affixed in the morphology, can derive a lexical category (ADJ). There are at least three nominal categories available: N(oun), #(number) (see Ritter 1992) and D(et). I will not consider K(ase) as a possibility, since there is very little evidence for KP in English.

We can eliminate D immediately, since nominal -ing cooccurs with the definite determiner, as in (21e) and (21f). This leaves # and N. Symmetry would suggest that nominal -ing is a #, since progressive -ing is a T. There is also some empirical evidence that nominal -ing is a #, which I will discuss shortly. I will adopt the working hypothesis, therefore, that -ing is a #.

If non-progressive -ing is a #, then it should head a #P. It should generally be found in a DP, since that is where #P's occur. The DP should be able to be an argument of a verb, or of a preposition, and should then need both Case and a θ-role. It is also possible that -ing itself might need either a Case or a θ-role, or both. Being a verbal affix, non-progressive -ing should take a projection of V as its complement. We have seen that non-progressive -ing places no temporal selectional restrictions on its complement. It is reasonable to suppose, then, that non-progressive -ing might not L-mark its complement, and that the VP might therefore be a barrier for A-movement of an argument of V.

When #-ing takes a full VP complement, the verb heading that VP will assign Case and θ-roles its arguments in the normal way. Direct object noun phrases should therefore appear. Subject noun phrases will receive a θ-role from the verb, but will receive no Case. If #-ing does not L-mark its complement, then the VP will be a barrier. This will block A-movement of the subject out of the VP. It is entirely possible, therefore, that the only well-formed subject noun phrase will be one that does not need case, namely PRO. This gives us the PRO+ing construction, whose d-structure is shown
in (22). The PP adjunct cases are identical, except that instead of a higher verb, as in (22), there is a higher preposition.

\[
(22) \quad \begin{array}{c}
\text{VP} \\
\text{DP} \\
\text{Ernie} \quad \text{V} \\
\text{likes} \\
\text{D} \\
\text{D'} \\
\text{\#P} \\
\text{Ø} \\
\text{\#'} \\
\text{\#} \\
\text{\#'} \\
\text{-ing} \\
\text{DP} \\
\text{PRO} \quad \text{V} \\
\text{tease} \\
\text{Big Bird}
\end{array}
\]

This structure also allows us to account for the **poss-ing** construction, if the possessive suffix 's is a D which assigns genitive case to its specifier. Consider the structure in (23).

\[
(23) \quad \begin{array}{c}
\text{VP} \\
\text{DP} \\
\text{Bert} \quad \text{V} \\
\text{resent} \\
\text{D} \\
\text{D'} \\
\text{Ernie} \\
\text{\#P} \\
\text{\#'} \\
\text{\#} \\
\text{\#'} \\
\text{-ing} \\
\text{DP} \\
\text{PRO} \quad \text{V} \\
\text{tease} \\
\text{Big Bird}
\end{array}
\]

The argument in the VP-specifier cannot move out of VP because VP is a barrier. **Ernie** therefore originates in the DP-specifier, and is coindexed with PRO. The theory of coreferential topics and variable \(\theta\)-roles (Brunson and Cowper 1992) gives the interpretation that Ernie is simply the agent of **tease**.

The account of the non-progressive **acc-ing** construction is less obvious. There appear to be three logical possibilities. First, perhaps it is really a **poss-ing** construction, with a non-standard null possessive determiner. This would mean that the **acc-ing**
construction would have the structure in (23), except that D would be null. Such an analysis might account for the slightly non-standard flavour of the non-progressive acc-ing construction. A second possibility is that the non-progressive acc-ing construction is just a #P with the accusative noun phrase in the specifier position in #P, as in (24).

(24)

```
    VP
      /\             \
     /   \         /\                    \
    DP   V'       #P                  #'
   /     |                /           \             \
 Bert V   DP           Ernie #                   VP \
 /   |    |                        /   |            \
 resent DP      #               -ing DP     V' \
 /     |                        /   |        /       \       \
 Ernie      V                 PRO V       Big Bird
```

Ernie would then undergo Exceptional Case Marking from resent. The problem with this treatment is that the internal argument of resent, the whole #P, would lack Case.

A third possibility, least desirable of all, is that this is yet a third -ing, which L-marks its complement, but is otherwise identical to non-progressive -ing, and that the argument in the VP-specifier moves to the specifier position of the category projected by -ing so as to receive Case from the higher verb.

Let us turn now to the structure that would arise if -ing were head-adjoined at d-structure. Here, it is at least conceivable that it would absorb a θ-role from V, and that it would interfere structurally with Case assignment by V. We therefore would not expect to find bare DP objects, and we might expect to find that one of the verb's θ-roles had been suppressed. Process nominals fit this picture, as shown in (25).

(25)

```
    VP
      /\             \
     /   \         /\                    \
    DP   V'       #P                  #'
   /     |                /           \             \
 we V    DP             D           #P          V \
 /     |                /   |            /       \       \
 watched D'          the   #     #          P
```

Here, the external argument of load has been suppressed. The internal argument is present, but it is case-marked by of. Since loading is a # rather than a N, it is correctly predicted that it cannot be pluralized.
Finally, let us consider what happens when #-ing is affixed in the morphological component. If progressive -ing, which belongs to the category T, derives an adjective when it is affixed in the morphology, then it is not implausible that non-progressive -ing, which belongs to the category #, should derive a lexical category when it is affixed in the morphology. In this case, the lexical category concerned is N. We would expect to find an -ing word which can occur in the plural and whose 0-roles have all been discharged. This is the result nominal, illustrated in (26).

\[\text{(26)}\]

\[
\begin{array}{c}
\text{DP} \\
\text{D} \\
\text{the} \\
\text{NP} \\
\text{[+pl]} \\
\text{N'} \\
\text{N} \\
firing
\end{array}
\]

4. Conclusion

I have shown that the various constructions in which -ing appears can be accounted for fairly straightforwardly if we assume that there are two distinct -ing morphemes in the language, each of which can be affixed in the same three ways that -en can. The two morphemes belong to different syntactic categories, thus satisfying the requirements of the strong monosemy hypothesis. One -ing corresponds to what is called a verbal noun in other languages, while the other corresponds to the present participle.

While many technical questions remain, it appears that the behaviour of -ing in English confirms both the strong monosemy hypothesis and the three-way approach to inflectional affixation.

References


Walker, Rachel. 1992. ‘-ing, Head Adjunction and Noun Incorporation.’ ms., University of Toronto.