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# Gerund participles and head-complement inflection conditions\*

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Traditional grammars contributed enormously to our understanding of the facts of English, yet there are facts about the language that some or most of them have missed, facts that were not discovered or described until the generative grammar period. The constraints on long-distance grammatical dependencies seem very largely to be in this category. So do inflection constraints of the sort examined in Ross (1972a). Ross began by noting this grammaticality contrast:

- (1) a. It continues to rain.
- b. It continues raining.
- c. It is continuing to rain.
- d. \*It is continuing raining.

Many and perhaps most speakers share these judgments. With verbs such as *keep*, Ross noted, it is very strong: an example like *\*It is keeping raining quite hard here* is very clearly ungrammatical for essentially everyone.

Ross argued for the existence of a surface structure constraint in English grammar denying grammaticality to certain sentences in which two *-ing*-inflected verbs are adjacent. He called it the “Doubl-*ing*” constraint. His formulation was complex; he stated it with a global codicil about the clauses having to have been subjacent (one immediately embedded in the other) in deep structure, and adds a paragraph, based on observations of George Lakoff’s, suggesting that the right formulation might be transderivational. There were various later attempts to remove any global or transderivational reference from Ross’s treatment (Emonds 1973 was one, and Pullum 1974 offered a friendly amendment). But sixteen years after Ross’s article, Milsark (1988: 625) proposed that the right answer was as simple as this:

- (2) The Doubl-*ing* Filter (Milsark's formulation)  
At PF, mark as ill-formed any sentence containing contiguous -*ing*-affixed words.

By "PF", Milsark means the most superficial level of description the grammar provides, the one at which phonetic interpretation of surface structure is made explicit.

Milsark's formulation exhibits a familiar feature of transformationalist papers of the last twenty years. The strategy is to present a highly over-general description of some phenomenon and then try to show that appropriate principles of Universal Grammar (UG) can rein in the excess generality. The program aims at discovering interesting and powerful principles of UG. However, it seems to us most unlikely that reliable principles of UG will arise out of unreliable description at the parochial (that is, non-universal) level. Milsark's level of generality here cannot be made compatible with the facts, and the ways in which it fails do not seem to be of a sort that we could expect universal grammar to rectify. In this paper we will pursue the question of just how and why it fails, arriving ultimately at a satisfyingly accurate formulation that is at the same time remarkably conservative and traditional in what it says and what theoretical concepts it relies on. Though first noted (it seems) in generative grammatical research, Doubl-*ing* phenomena are best described in a way thoroughly compatible with the assumptions of traditional grammar.

Milsark does have a proposal for covering the well-known contrasts between superficially similar structures such as the pair in (3):

- (3) a. Terry was enjoying reading aloud.  
b. \*Terry was starting reading aloud.

His explanation of this difference is that the surface structures (at the PF level, where the Case Filter applies) are as follows:

- (4) a. Terry was enjoying [<sub>NP[+ACC]</sub> [<sub>NP[+GEN]</sub> e] [[<sub>N</sub> reading] aloud]].  
b. Terry was starting [<sub>IP</sub> [<sub>NP</sub> e] [<sub>V</sub> reading] aloud]].

Cased PRO (here shown as [<sub>NP[+GEN]</sub> e]) is assumed, under the hypothesis of Jaeggli (1980), to be visible to filters, and hence it renders the two -*ing*-forms in (4a) noncontiguous, so the filter does not exclude (3a). But Milsark needs a lot more than this to save his version of the constraint. He explicitly adopts (p.614) the very strong assumption that there is only a single -*ing* suffix in English, and his statement in (2) mentions no categories, so he is claiming that *any pair of words of any category* that happen to end in the -*ing* suffix and happen to be

adjacent in a surface string with no Cased empty category intervening will yield a violation of the filter. The erroneous predictions this makes go way beyond what other principles can cope with.

Given Milsark's assumption that all instances of *-ing* are to be identified, it is highly relevant that the list of syntactically or semantically distinct contexts in which a suffix of the shape *-ing* shows up in English is quite formidable. In (5) we list eight derivational processes that give rise to words in *-ing* (see Marchand 1969: 302–5), and in (6) we list twenty-five distinguishable syntactic constructions that call for an *-ing*-inflected verb.

- (5)
- a. Prepositions and subordinating conjunctions (*according (to), during, concerning, considering*).
  - b. Deverbal adjectives (*charming, fascinating, disgusting*).
  - c. Deverbal nouns of several sorts (locational: *mountings, housings*; material: *coatings, coverings*; concrete result: *writings, buildings*; activity: *drinking, smoking*; event: *meetings, shootings*).
  - d. Denominal nouns of material (*planking, sheeting, towelling*).
  - e. Deadjectival nouns naming fruit varieties (*golding, greening, sweeting*).
  - f. Deverbal first elements of participle-noun compounds (*eating apple, carrying case, dancing girl, wading bird*).
  - g. Deverbal second elements of noun-participle compounds (*spear-fishing, bicycle-riding*).
  - h. Deverbal second elements of compound adjectives of various sorts (*heart-breaking, night-flying, all-embracing, self-destroying, self-loading, easy-going, good-looking*).
- (6)
- a. Adverbial VPs with *go* and *come* (*go fishing, come dancing*).
  - b. Adverbial VPs with *get* (*get going, get cracking*).
  - c. Progressives (*am watching, is singing*; also prospective present *am going to*).
  - d. Complements to intransitive verbs of temporal aspect (*keep looking, start running*).
  - e. Post-particle complements to intransitive verbs of temporal aspect (*keep on looking, went on running*).

- f. Post-object complements to transitive perception or causation verbs (*saw Mommy kissing Santa Claus, leave them wanting more*).
- g. *From* + VP complements of intransitive abstention verbs (*can't keep from crying, please refrain from reciting poetry*).
- h. *From* + VP complements of transitive prevention verbs (*keep us from leaving, stop you from reciting poetry*).
- i. Close adverbial VP adjuncts (*I arrived wearing only a T-shirt*).
- j. Loose adverbial VP adjuncts (*Wearing only a towel, I rushed into the street*).
- k. Subject-predicate absolute clauses (*There being no objection, the meeting was adjourned*).
- l. Preposition-subject-predicate absolute clauses (*With you being in L.A. half the time, it's difficult to hold things together*).
- m. Preposition + VP loose adverbial adjuncts (*by lurking in a culvert*).
- n. Prenominal modifiers (*a sleeping dog, screaming children*).
- o. Postnominal "reduced relative" modifiers (*anyone wearing a tie, two birds chirping merrily*).
- p. Obligatorily subjectless circumstantial complements (*We had trouble keeping the engine running*).
- q. Extraposed nominal gerund phrases (*It's no use your looking at me with those cow eyes*).
- r. The What's X doing Y construction (*What are you doing reading my mail?*).
- s. Nominal gerunds with no determiner (*Starting the car is never easy*).
- t. Nominal gerunds with genitive determiner (*my doing this, your having broken it*).
- u. Nominal gerunds with lexical determiner (*I don't approve of this running away whenever things get tough*).
- v. Gerunds with accusative subject (*I hate them doing that*).
- w. Action nominals (*the continuous burning of the Amazon jungle*).
- x. Covertly passive complements (*This coat needs cleaning by a professional*).
- y. Exclamatives (*Little Kim running a business!*).

From the above it follows that there are literally hundreds of syntactically or semantically distinct contexts in which it could fortuitously turn out that two word forms with the *-ing* suffix might be contiguous in a surface string. Given the taxonomy of thirty three *-ings* above, the upper bound on the number of distinct possibilities for two *-ing*-forms to fall adjacent in a string is  $33^2 - 33 = 1,056$ . Nearly all the possibilities that can be exemplified fail to engender *Doubl-ing* violations. A few are listed in (7), with the sequence of *-ing*-forms in boldface. All of them violate Milsark's filter, but in fact none of them have the characteristic ungrammaticality of *Doubl-ing* violations.

- (7) a. Preposition with deverbal noun:  
 You should report any pain experienced *during walking* or other normal activities.
- b. Conjoined action nominals:  
 There was a lot of *pushing, shoving*, and elbowing of ribs.
- c. Progressive aspect and adverbial *-ing* (Silva 1975):  
 They are all *going fishing*.
- d. Attributive adjective before noun:  
 It was a truly *amazing building*.
- e. Noun before predicative adjective:  
 The novel design made the *building amazing*.
- f. Action nominal before gerund participle complement:  
 We could hear the *screaming coming* out of the air vents.
- g. Denominal material noun before exclamatory *-ing*:  
 Just imagine: aluminum *siding selling* for a dollar a foot!

Milsark's formulation thus fails, literally, a thousand times over. But what, at root, is the problem with his account? It is distinguished by its attempt to maintain both that (i) no special syntactic condition is needed to draw the distinction illustrated in (3), and that (ii) no reference to the grammatical categories of the *-ing*-suffixed words need be made. By adhering to both of these positions, Milsark casts the filter in a form that looks essentially morphological (in that it mentions particular suffixal subparts of words) or phonological (in that it mentions a specific phonological shape). It contains nothing at all that is framed in the theoretical vocabulary of syntax. This is what dooms it to failure. The *Doubl-ing* constraint is in fact a syntactic condition, not a morphological or phonological one. Its presence in the grammar may perhaps owe something to a phonesthetic dispreference for jingling sequences of similar-

sounding endings (see Bolinger 1979 for a claim that nothing more than this — the same stylistic preference that would disfavour *Was his the token taken?* — is involved in the Doubl-*ing* constraint), but it has clearly been grammaticized in a very specific way, as contrasts like those in (3) and (7) show. Synchronically it must be treated as an ordinary syntactic restriction in the grammar of English, making no reference to morphology or phonology.

We claim that *-ing* is not unitary in English. We separate the verbal inflectional suffix *-ing* from the derivational noun-forming, adjective-forming, and/or preposition-forming suffix (or suffixes) that happen to share its shape. That is, we take the traditional view that instances of a suffix that are attributable to word formation operations (with a concomitant semantic value) are to be distinguished from instances of a similarly shaped suffix that are attributable to the inflectional realization of morphosyntactic categories (with no semantic consequences).

Interestingly, in the case of the *-ing* suffix it is possible to offer some independent empirical evidence from colloquial usage to support our decision. It comes from studies of variation in pronunciation in British English. There is a morphophonemic alternation between *-ing* and *-in'* in the colloquial speech of most varieties of English. This alternation very frequently treats inflectional *-ing* differently from derivational *-ing* or other instances of the phonological sequence /ɪŋ/. It affects inflectional *-ing* significantly more (in terms of percentage of tokens showing the *-in'* form) than other instances of the same phonological sequence. (Speakers who find no difference in their dialect are of course neutral rather than disconfirming for the claim made here.) We do not need to rely on intuition to support this claim, because Houston (1991) reports some relevant statistical results from an analysis of a sample of British working class speakers interviewed by William Labov in the 1970s, and comes up with clear evidence of the distinction under discussion.

In Houston's sample, unstressed *ing* syllables in monomorphemic forms were pronounced with a velar nasal 63% of the time, derivational *-ing* suffixes had the velar nasal 23% of the time, and inflectional *-ing* suffixes had the velar nasal only 13% of the time. Her statistical analysis (see Table 18.7 of probability coefficients for the velar variant of *-ing* broken down by inflectional, derivational, and monomorphemic contexts, p. 250) shows a figure of  $p = 0.26$  for the property of being an instance of inflectional *-ing* suffix, meaning that this property disfavors the occurrence of the velar variant fairly strongly, and  $p = 0.79$  for the property of being in a monomorphemic word, meaning that a

monomorphemic context strongly favors preservation of the velar nasal. The figure for the property of being a derivational *-ing* is  $p = 0.43$ , meaning that the influence of this factor is relatively weak and does not significantly affect the variation in pronunciation of the suffix (0.43 is not very far removed from the 0.50 that is found as the probability coefficient of a factor that does not affect the likelihood of a variable's realization).

It should be made clear that Houston argues against regarding the distinction between derivation and inflection as a sufficient basis for explaining all the variation; she maintains that the best fit is with a more ramified model, and corresponds very closely to the "nouniness" gradation argued for by Ross (1972b, 1973). There are some questions about some of her finer classifications of the data and about her choice of statistical tests, and the full implications of her data are not clear to us; but it does seem clear enough to us that the statistical patterns of distribution of the two morphophonemic alternants in speech indicate that English working class speakers distinguish derivational *-ing* from inflectional *-ing*; and Houston cites studies making the same claim for American English.

While we distinguish derivational from inflectional *-ing*, we nonetheless agree with Milsark on uniting all the inflectional cases of *-ing*. In particular, we would defend the position long taken by Rodney Huddleston that no separate gerund and progressive forms of the verb should be morphologically distinguished. There seems no more reason to distinguish the gerund *-ing* form from the progressive *-ing* form than to posit a different *-ing* suffix for each of the 25 constructions listed in (6) above. There is a compelling argument from parsimony for analyzing them as the same word form being called upon in different syntactic constructions.

As it happens, we can again show a factually-based argument for the analysis we advocate. It is based on English compound verbs like those in (8).

- (8) spear-fishing, kite-flying, bicycle-riding, truck-driving, hand-holding, basket-weaving, beer-drinking, name-taking

Kiparsky (1974) noted that the constructions in which such compound verbs can occur are all and only the constructions in which the verb is inflected with *-ing*. Examples like those in (9) are all ungrammatical, yet any of the inflectional *-ing* contexts in (6) will permit these compounds, as illustrated by the representative four examples in (10).



- (9) a. \*They usually spear-fish near the rocks.  
 b. \*We kite-flew all this morning.  
 c. \*Chris wants to truck-drive.  
 d. \*I have seldom bicycle-ridden.
- (10) a. Let's go spear-fishing near the rocks.  
 b. We were kite-flying all this morning.  
 c. Chris wants to carry on truck-driving.  
 d. I have seldom enjoyed bicycle-riding.

Clearly, rather than postulate a number of homophonous *-ing* suffixes that just happen to be the only ones permissible in this construction, it is preferable to postulate that the construction is limited to a single grammatical category.

Houston's data may also be interpretable as supporting this analytical decision. Her classification of subtypes of inflectional *-ing* is not as fine as the one suggested by (6), but as far as we can tell, she found broadly similar phonological variation behaviour in all the various inflectional *-ing* constructions she distinguishes: progressive (*I'm workin' at a caterer's*), quasi-progressive (*I started gettin' pains*), VP complement (*I don't mind watchin' rugby*), periphrastic future (*things are goin' to happen*), appositive participle (*We've been to Jersey, drivin' all over*), gerundive adjunct modifier (*a waitin' list*), participial adjunct modifier (*the plain workin' man*), ACC-ING (*'im gettin' battered*), and gerundive nominal (*havin' a fall*). This could be taken as an argument for analyzing them all as instances of a single grammatical (morphosyntactic) category, rather than treating them as an array of distinct suffixes that coincidentally have identical morphophonemics and highly similar variation profiles.

We will follow Huddleston in using the term "gerund participle" for the grammatical category of which the *-ing* inflection is the realization. The gerund participle is the most regular and reliable form of the verb paradigm in English; every verb that has non-finite forms has a gerund participle, and no gerund participles are irregular, not even those of highly irregular verbs like *be* or *go* or *have*.

This result, together with the fact that no instance of noun-forming or adjective-forming *-ing* is ever implicated in a Doubl-*ing* violation, permits a dramatic improvement in the accuracy of Milsark's formulation of the Doubl-*ing* filter. All that is necessary is to replace the phonological or morphological reference to *-ing*-affixed words by the morphosyntactic reference to gerund participles:

(11) The Doubl-*ing* Filter (first revision)

Mark as ill-formed any sentence containing contiguous gerund participles.

(We omit Milsark's qualifier "At PF" because, whatever the merits of Chomsky's suggestion that there is a "PF" level combining surface syntactic and phonetic properties, the level at which filters apply would surely be a matter of universal grammar, not something to be mentioned in a particular constraint in English, so there was no reason for Milsark to mention it in his statement. As we shall see, it will not be needed in our statement either.)

However, it is still the case that there are numerous ways in which gerund participles can fall together in a surface string, and only a limited set of them occasion violations of the Doubl-*ing* filter. We now have to consider Milsark's suggestion that the exemptions from the filter are simply the structures in which Case is assigned to the constituent containing the second -*ing* form, so that a Cased PRO linearly intervenes between the two and renders them noncontiguous in the representation against which the filter is checked. In fact, this suggestion does not cover the full range of cases. Examples of sequences of contiguous non-Case-marked gerund participle verbs that do not invoke the Doubl-*ing* filter include the following (some of these are based on examples found in Ross (1972a, 73) and Pullum (1974, 114)).

## (12) a. Conjoined premodifiers:

*Crawling, flying*, and jumping insects present three different kinds of problem.

## b. Stacked premodifiers:

These herbivorous flying insects are not as much of a nuisance as the *biting flying* insects we get in the summer.

## c. Progressives in apposition:

I was *sitting thinking* about my troubles.

## d. Aspectual complement before premodifier:

Waldo keeps *molesting sleeping* gorillas.

## e. Progressive before progressive:

I heard a man who was *dying describing* his feelings.

f. *What's X doing Y* construction where  $Y = VP$ :

What are you *doing reading* my mail?

g. *Get going* idiom:

This is a new company; we're only just *getting going*."

This list could be greatly lengthened, but this heterogeneous sample will suffice here.

The crucial syntactic distinction that must be drawn by (or must somehow constrain the applicability of) the Doubl-*ing* filter is, in traditional terms, the distinction between (clausal) direct objects and postverbal complements that are not objects. This might be reconstructed in terms of nominal versus verbal clause-like constituents, as suggested in Milsark (1972), following Emonds (1970), or it might be reduced to the distinction between Case-marked and non-Case-marked immediately postverbal constituents. The choice is not at all crucial here, but for compatibility with Milsark's (1988) current assumptions, let us assume the latter.

Case-marked complements of verbs occur as passive subjects and *tough*-movement subjects and are required to be immediately adjacent to their governing verbs, while non-Case-marked complements lack these properties. This is illustrated in (13), (14), and (15) with the verb *try*, which on the reading "test or experience" takes a Case-marked object and on the reading "attempt" takes a non-Case-marked infinitival complement.

- (13) a. Everyone here has tried unflavoured oat bran.  
 b. Unflavoured oat bran has been tried by everyone here.  
 c. Everyone here has tried to cut down on fat.  
 d. \*To cut down on fat has been tried by everyone here.
- (14) a. To try unflavoured oat bran is difficult for some people.  
 b. Unflavoured oat bran is difficult for some people to try.  
 c. To try to cut down on fat is difficult for some people.  
 d. \*To cut down on fat is difficult for some people to try.
- (15) a. \*I have tried many times unflavoured oat bran.  
 b. I have tried many times to cut down on fat.

We suggest that the correct generalization about the Doubl-*ing* filter is that it applies to sequences of a matrix verb immediately followed by the verb of (what transformationalists would call) a non-Case-marked complement. This is strongly suggested by Milsark in his text (pp. 624–631), but not reflected in his formulation of the filter. But there is a more traditional way to put this. The Doubl-*ing* restriction affects only cases where the constituent following the first verb does in fact have the grammatical function of complement rather than that of direct object.

Revising Milsark's formulation of the filter to mention the crucial syntactic distinction produces the purely syntactic formulation in (16).

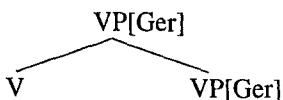
(16) The Doubl-*ing* Filter (second revision)

Mark as ill-formed any sentence containing a sequence *XY* where *X* and *Y* are both gerund participles and *Y* is the head of a phrase bearing the complement relation to *X*.

Milsark (1988: 620 n.10) notes a problem for his own attempt to embrace this generalization. If all clauses have full CP structures (that is, are abstractly full clauses introduced by subordinators), as is widely assumed in generative grammar, then even if he assumes that the verb moves to Infl to amalgamate with the gerund participle-defining features and acquire the *-ing* suffix, it will not be in the head position of the complement CP. The configuration the filter has to rule out is not a local one, but must span the boundaries of a CP and an IP. The items whose adjacency the filter proscribes are in fact neither adjacent (there are various empty categories in between) nor subjacent (the second is contained within more than one maximal project that does not contain the first). In theories that assume direct VP complementation of verbs, this does not have to be the case. Assuming for the sake of concreteness that the morphosyntactic feature [Ger] (gerund participle) is present on phrase nodes as well as lexical heads, and that a non-Case-marked (non-object) complement VP is represented as a VP sister to V under VP, the Doubl-*ing* constraint can be stated as in (17).

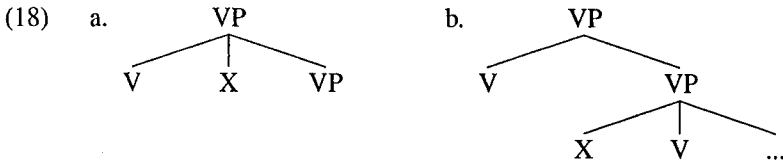
(17) The Doubl-*ing* Filter (third revision)

The following type of local tree is not permitted:



This mentions just a single local tree. This is highly significant. What it means is that the condition can be represented as a constraint on a constituency principle for local tree configurations directly, instead of as a non-local filter that scans the whole surface structure of a sentence. Pullum and Zwicky (1991) suggest that the Doubl-*ing* Constraint is best located as a language-specific codicil to the English instantiation of a universal constituency principle defining VPs. The generalization is independent of the properties of any particular lexical head, but sensitive to the difference between direct objects and non-object VP complements.

There is a very interesting difference between the informal statement in (16) and the claim made by saying that local trees matching the template (17) are not admissible. While (16) mentions contiguity between a gerund participle head and the gerund participle head of its complement, (17) does not. A single local tree can include the head verb of the matrix VP or the head verb of the complement VP, but cannot include both, because they are not in a mother-daughter or sister-sister relation. Hence, although there is contiguity in (17) between the matrix head and the complement VP, this is not enough to prevent material from intervening between the two heads; it is only enough to prevent material *in the matrix VP domain* from intervening. That is, while a constituent in the position marked X in a tree like (18a) would prevent the tree from meeting the template in (17), a constituent in the X position in (18b), in the same linear position, would not be relevant, and the constraint would still apply.



Remarkably, there is once again empirical evidence that our analysis of the *Doubling* constraint is correct. We are predicting that intervening material renders the constraint inapplicable only if it belongs to the matrix VP. Although there is always some alleviation of the constraint when material intervenes between the two *-ing* verb forms, simply because the unpleasant phonetic jingle effect is attenuated, speakers who have the *Double-ing* constraint will find that there is nonetheless a very clear contrast of grammaticality between the following pairs:

- (19) a. [<sub>VP</sub> Keeping right on [<sub>VP</sub> drinking]] would be most unwise.  
 b. \*<sub>[VP</sub> Keeping [<sub>VP</sub> secretly drinking]] would be most unwise.
- (20) a. I hope you won't be [<sub>VP</sub> continuing throughout next week [<sub>VP</sub> going over the same material]].  
 b. \*I hope you won't be [<sub>VP</sub> continuing [<sub>VP</sub> suddenly jumping out and scaring people]]
- (21) a. [<sub>VP</sub> Beginning straight away [<sub>VP</sub> being less hostile]] would be a good first step.

- b. \*<sub>[VP Beginning [<sub>VP</sub> not always being so hostile]]</sub> would be a good first step.

Thus formulating the constraint in terms of a single local tree makes additional confirmed predictions about previous unnoticed facts, and brings out an additional way in which Milsark's formulation is incorrect: it is not contiguity between the two *-ing*-marked verbs that is required, but adjacency between the first verb and its complement VP.

Occurrence of an overt NP between the two verbs very clearly eliminates the effect of the Doubl-*ing* constraint, of course, as seen in contrasts like this:

- (22) a. We have difficulty keeping the pump running.  
b. \*The pump has difficulty keeping running.

This follows under the present formulation if *the pump* in (22a) is in the matrix clause; that is, if the structure of the *keep* VP is (23a), a raising-to-object structure rather than a small-clause structure like (23b).

- (23) a. [<sub>VP</sub> keeping [<sub>NP</sub> the pump] [<sub>VP</sub> running ...]]  
b. [<sub>VP</sub> keeping [<sub>SC</sub>[<sub>NP</sub> the pump] [<sub>VP</sub> running...]]]

The latter structure fails to bring (22a) under the scope of the generalization illustrated in (19)–(21), namely that constituents embedded in the complement of the matrix verb do not have an adjacency-interrupting effect. And Milsark's assumption that any Case-marked NP (overt or empty) between two *-ing*-marked verbs will always nullify the Doubl-*ing* constraint seems to be incorrect: if *wh*-traces are Case-marked NPs, they should block the constraint; but in fact (24a) seems no better than (22b), or (24b), where a heavy intervening NP is shifted rightward:

- (24) a. \*Which pump did you have difficulty keeping *t* running?  
b. \*The campus police are stopping *t* drinking all students who get bad grades.

The optimal hypothesis would appear to be that (22a) has the structure (23a) rather than (23b), and empty categories are never visible for purposes of assessing adjacency in constraints of this type. Thus we have an argument against small clauses (at least with the type of matrix verb considered here), and an argument in favor of the conclusion of Halpern (1991), where a phonological argument against empty category visibility is given.

A brief discussion by Williams (1983: 302–6) deserves attention at this point, since it presents a V – VP analysis similar to what we are advocating, but

also attempts a collapsing of the Doubl-*ing* constraint with another grammatical fact about English, with a view to capturing a wider generalization. Williams' statement of the Doubl-*ing* constraint is as follows (p.303, example 62):

$$(25) \quad *V_{+PrP} VP_{+PrP}$$

But he generalizes this from sequences where both constituents are gerund participles to cover also sequences where neither is a gerund participle, to deal with facts like these:

- (26) a. Everybody saw John leave.  
 b. \*John was seen leave by everybody.

But this collapsing is made possible by what is no more than a trick of feature encoding. Having assumed in (25) a feature  $\pm PrP$ , Williams generalizes his constraint through the device of alpha variables over feature values, yielding the following (p.303, example 63):

$$(27) \quad *V_{\alpha PrP} VP_{\alpha PrP}$$

But there is no independent reason for classifying English verb forms in terms of a binary PrP feature, which is crucial here. In fact, since the number of distinct forms that need to be recognized for English verbs for reasons not having to do with tense or agreement is five, the most straightforward way of distinguishing them is to use a single feature VFORM with the possible values Fin (finite), Irr (irrealis), Base, PstP (past participle), and Ger (gerund participle). We know of no argument for analyzing verbs in a way that involves a binary feature whose "+" value denotes the gerund participle form and whose "-" value denotes the disjunction of Finite, Irrealis, Base, and Past Participle.

Furthermore, even granting Williams' various assumptions about how his constraint applies (for example, that it will not apply to verbs followed by subjectless nominal gerunds because they are NPs and it will not "look into" these (1983: 305), and that \**John was seen leave* will be structurally differentiated from *John was expected to leave* in some way), the generalization seems spurious. Contrasts like those in (28) are surely a matter of subcategorization, not inflectional marking incompatibility:

- (28) a. (i) The police saw John leave.  
           (ii) John was seen to leave by the police.  
 b. (i) The police watched John leave.  
       (ii) \*John was watched to leave by the police.

- c. (i) The interview committee had the candidate leave.  
(ii) \*The candidate was had to leave by the interview committee.
- d. (i) \*The interview committee forced the candidate leave.  
(ii) The candidate was forced to leave by the interview committee.

And Williams' proposal that a V has to differ from its VP sister in respect of whether or not it is a gerund participle is incompatible with the analysis we would assume for all of the following (assuming, as in Gazdar et al. 1985, that *to* is a defective non-finite auxiliary verb):

- (29) a. would *have been* nice (V[VFORM:Base] VP[VFORM:PstP])
- b. would *have to be* nice (V[VFORM:Base] VP[VFORM:Base])
- c. *would be* nice (V[VFORM:Finite] VP[VFORM:Base])
- d. *to be* nice (V[VFORM:Base] VP[VFORM:Base])
- e. *was eaten* by a bear (V[VFORM:Finite] VP[VFORM:PstP])
- f. *has eaten* a bear (V[VFORM:Finite] VP[VFORM:PstP])
- g. *was believed to be* a waste  
(V[VFORM:PstP] VP[VFORM:Base])

Consider (29a), for example. It is almost universally accepted that perfect *have* is a verb taking a subjectless complement, at least when a modal (in the Aux or Infl position) precedes it, yet Williams' constraint would not allow this analysis.

Williams' constraint is also incompatible with the well-supported claim that in the intransitive quasi-serial verb construction *Go get your shoes* the second verb is in a bare VP complement of the first; his constraint would block verb phrases such as the following, with the V – VP analysis of Pullum (1990) :

- (30) a. go be a fool if you want to  
(V[VFORM:Base] VP[VFORM:Base])
- b. usually go get the paper  
(V[VFORM:Finite] VP[VFORM:Finite])
- c. has come put things right  
(V[VFORM:PstP] VP[VFORM:PstP])

Finally, Williams' proposed constraint has an unacknowledged problem with the key fact that he wants to collapse with *Doubl-ing*, namely the puzzling and long-known fact about the naked infinitives that they resist matrix passivization. Williams himself notes that (what are standardly taken to be) NP-movement



traces must be invisible to the constraint. This is because the structure of (26b) would be (31).

- (31) \*John<sub>i</sub> was seen *t<sub>i</sub>* leave by everybody.

The question arises of whether (what are standardly taken to be) *wh*-movement traces are invisible to the constraint. But here the two halves of the constraint show different behaviors. The non-gerund participle half of Williams' purported generalized constraint seems definitely to be voided when a *wh* extraction site intervenes between V and VP:

- (32) a. This chair<sub>i</sub> I arranged to *have t<sub>i</sub> made* for me.  
 b. I can't trust a man whom<sub>i</sub> I have *seen t<sub>i</sub> cheat* his friends.  
 c. I disapprove of this tendency, which<sub>i</sub> I have *watched t<sub>i</sub> spread* among journalists.  
 d. It was as if one might at any moment *see t<sub>i</sub> emerge* the hand of God.

But the Doubl-*ing* constraint is insensitive to *wh* traces, so that (33b-d) are just as bad as (33a).

- (33) a. \*Don't try *keeping laughing* for two hours.  
 b. \*This is the man<sub>i</sub> that we've been *keeping t<sub>i</sub> laughing* for two hours.  
 c. \*I can't trust a man whom<sub>i</sub> I have been *watching t<sub>i</sub> cheating* his friends.  
 d. \*It was as if one might at any moment be *seeing t<sub>i</sub> emerging* the hand of God.

We conclude that Williams' extra degree of generalization is spurious, and (26) must have an explanation that is not bound up with the Doubl-*ing* constraint. What we are led to, therefore, is a statement of the Doubl-*ing* Constraint that says exactly what (17) said above. Williams is right about the support that the Doubl-*ing* constraint offers for nonclausal VP complements, but not about the feature trick with which he attempts to assimilate the constraint to other phenomena.

It is particularly interesting that there is evidence of a very similar kind from a different construction in which the adjacency of two verbs has been wrongly taken to be crucial. The *go get* construction mentioned above has generally been assumed to involve two verbs that not only have to be devoid of visible inflection but also have to be strictly adjacent. Thus, for example, the

attempt in Perlmutter (1971) to account for the absence of inflection by means of a surface filter is explicitly supported by evidence that no syntactic material can intervene between the two verbs. That is, Perlmutter claims that (34a) is ungrammatical for the same reason as (34b) and (34c).

- (34) a. \*He *goes get(s)* his shoes whenever I tell him to.  
 b. \*Please *go inside get* your shoes.  
 c. \*Now *go as fast as you can get* your father.

In (34a), the morpheme *-es* intervenes between *go* and *get*; in (34b) it is the word *inside*; and in (34c) it is the phrase *as fast as you can*. Although virtually everyone agrees that the examples in (34) are bad, there is wide agreement among American speakers on contrasts like the following.

- (35) a. \*I want you to *go* upstairs [<sub>VP</sub> *rewrite* this on a clean sheet of paper].  
 b. I want you to *go* [<sub>VP</sub> neatly *rewrite* this on a clean sheet of paper].  
 (36) a. \*Why don't you *go* outside [<sub>VP</sub> *put* the lizard back on its rock]?  
 b. Why don't you *go* [<sub>VP</sub> carefully *put* the lizard back on its rock]?  
 (37) a. \**Go* over [<sub>VP</sub> *glance* at her left ear] and tell me what you notice.  
 b. *Go* [<sub>VP</sub> casually *glance* at her left ear] and tell me what you notice.

After these data were presented in a paper by Pullum at the 1992 annual meeting of the Linguistic Society of America, James McCawley presented them to a number of speakers (students in classes at the University of Chicago) for judgment, and recorded the results. He reports strong support for the grammaticality judgments we affirmed (see McCawley 1996). There are some speakers (Zwicky is one) who find even the (b) examples rather bad, but even those speakers find the (b) cases perceptibly better than the (a) cases.

The configuration involved in the *go get* construction is exactly the one involved in the *Doubl-ing* constraint, namely this:

- (38)
- $$\begin{array}{c}
 \text{VP } [F_1; v_1] \\
 \swarrow \quad \searrow \\
 \text{V} \qquad \qquad \text{VP } [F_2; v_2]
 \end{array}$$

In the case of the Doubl-*ing* constraint, the configuration in (38) is forbidden if  $[F_1:v_1] = [F_2:v_2] = [\text{VFORM:Ger}]$ . In the case of *go get*, the configuration in (38) is again involved and is under the restriction that neither  $[F_1:v_1]$  nor  $[F_2:v_2]$  may determine any morphological operation that modifies the stem shape of the head V; in other words, the V has to be realized in the Base form or — what suffices for most speakers — in a form phonologically identical to the Base form (see Pullum 1990 for further details). It seems likely that both constraints are best expressed as conditions on constituency statements; that is, generalizations governing which phrasal constituents may be combined with which heads to define which types of larger constituents.

To put things this way relates the intrusion asymmetries above to a very general fact about how syntax works: the reason that right modifiers of the matrix verb affect the Doubl-*ing* constraint and the *go get* construction but left modifiers of the complement verb do not has to do with the fact that true syntax is never about putting words together with other words, but always about putting phrases together with heads.

There is a further advantage of our reformulation of the Doubl-*ing* constraint: it eliminates a violation of the Principle of Phonology-Free Syntax, which we have argued for in a number of other publications (see, for example, Pullum and Zwicky 1988 for a conceptual introduction). This principle forbids reference to phonological information in syntactic statements. It is well supported by research on a large number of languages. If there can be PF filters on the output of the syntax that can mention the phonological or morphological form of words, it is not clear that phonological conditions on syntactic structure can be correctly excluded (imaginary languages with ridiculous rules like “in a passive clause the subject must not begin with a bilabial nasal” might be describable if such filters are permitted). An appropriately restrictive theory of Universal Grammar will exclude phonological and morphological references from the formulation of syntactic conditions in principle, and thus require that restrictions like the Doubl-*ing* constraint be stated in purely syntactic terms. This we achieve under our treatment. The consistency of our analysis with the principle increases our confidence in both (as do the four reanalyses of apparent counterexamples in French that we discuss in Miller, Pullum and Zwicky 1997, where again we propose that simple and plausible traditional descriptive analyses turn out to be mutually supportive with the phonology-free syntax).

The syntactic statement we have given here, though vastly more adequate in

descriptive terms than Milsark's account, is still extremely simple, and can be expressed without difficulty in entirely traditional terms:

- (39) It is not acceptable in most varieties of modern English for a complement (as opposed to an object) marked with gerund participle inflection to be adjacent to its matrix-clause verb when that verb is likewise in the gerund participle form.

There are puzzles that remain, and of course one of them is how a learner might learn something like this. No utterance ever heard would be able to provide evidence for it; instead, it would have to be learned by perceiving an absence from the set of utterances encountered. But in this, our descriptive statement is no different from Milsark's. We are inclined to think that the answer might be that infants learning languages do so through slow and conservative generalization, never assuming that some configuration like (38) is permissible with a given instantiation of  $[F_1:v_1]$  and  $[F_2:v_2]$  until a confirming example has been heard. Determining whether this is too conservative a standpoint to permit learning to occur must await further research on language acquisition.

## Note

- \* It is a pleasure to be able to offer this study of a small point in English grammar as a tribute to Rodney Huddleston, a grammarian whose work on English grammar (small points and large) we have admired greatly for more than two decades. We thank a number of colleagues who contributed correspondence, comments, conversation, or useful references, particularly James McCawley, Bonnie McElhinny, Louise McNally and (we do have *some* friends whose names begin with something other than *Mc*-) John Rickford. Assistance and support was received from the staff at the Center for Advanced Study in the Behavioral Sciences, where some of the research for this paper was done, and were supported in part by NSF grant number BNS 87-00864 and a sabbatical leave from the University of California, Santa Cruz (Pullum) and a Distinguished Research Professor award from The Ohio State University (Zwicky).

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