

Fuzzy Grammar

A Reader

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Nouniness

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I. INTRODUCTION

In this paper, I will extend the theory of non-discrete grammar which underlies Ross (1972a). In that paper, I was concerned with demonstrating that the traditional view of the categories *verb*, *adjective*, and *noun*, under which these three are distinct and unrelated, is incorrect. Instead, I argued, these categories are (possibly cardinal) points in a linear *squish*, or quasi-continuous hierarchy, such as that shown in (1.1).

- (1.1) *Verb* > Present participle > *Adjective* > Preposition > Adjectival Noun (e.g. *fun*)
> *Noun*

As this notation suggests, adjectives are "between" verbs and nouns with respect to a number of syntactic processes. A number of these are shown in Ross (op. cit.) to apply "most" to verbs, "less" to adjectives, and "least" to nouns.

The present paper is concerned with demonstrating the existence of a similar squish—that in (1.2), the *Nouniness Squish*.

- (1.2) *that* > *for to* > Q > *Acc Ing* > *Poss Ing* > Action Nominal > Derived Nominal
> *Noun*

The entries in (1.2) are abbreviations for types of complements, as explained and exemplified in (1.3).

- (1.3) a. *that* = *that*-clauses (*that Max gave the letters to Frieda*)
b. *for to* = *for* NP *to* V X (*for Max to have given the letters to Frieda*)
c. Q = embedded questions (*how willingly Max gave the letters to Frieda*)
d. *Acc Ing* = $\left[\begin{array}{c} \text{NP} \\ + \text{Acc} \end{array} \right] \text{V} + \text{ing X}$ (*Max giving the letters to Frieda*)
e. *Poss Ing* = NP's V + *ing* X (*Max's giving the letters to Frieda*)
f. Action Nominal $\left\{ \begin{array}{c} \text{Max's} \\ \text{the} \end{array} \right\}$ *giving of the letters to Frieda*
g. Derived Nominal $\left\{ \begin{array}{c} \text{Max's} \\ \text{the} \end{array} \right\}$ *gift of the letters to Frieda*
h. *Noun* (*spatula*)

To show that these complement types are hierarchically grouped, I will cite a number of syntactic phenomena which "work their way into" (1.2) and (1.3), as it were. That is, some of these phenomena will apply to (1.3a), but not to (1.3b-h); some to (1.3a-b), but not to (1.3c-h); some to (1.3a-c), but not to (1.3d-h), etc. My claim is simply this: there exists no syntactic phenomenon which applies to, say, (1.3a), (1.3d), and (1.3g), but not to the other elements of (1.3).

* John Robert Ross, 'Nouniness', in Osamu Fujimura (ed.), *Three Dimensions of Linguistic Research* (Tokyo: TEC Company Ltd., 1973), 137-257. © 1973 John Robert Ross. Reprinted by kind permission of the author. Some minor corrections have been made by the editors.

2. THE EVIDENCE

2.1. *It* S

Let us begin with the rule, however it is formulated, which either inserts *it*, or, viewed from an opposite perspective, fails to delete an underlying *it*, before the complements of certain verbs. This process can result in the appearance in surface structure of an *it* before *that*, *for to*, and possibly before Q but not before any other elements of (1.2). Cf. (2.1).

(2.1) *It* Deletion

- a. I $\left\{ \begin{array}{l} \text{regret} \\ \text{resent} \\ \text{(dis)like} \\ \text{hate} \\ \text{etc.} \end{array} \right\}$ it $\left\{ \begin{array}{l} \text{that you left} \\ \text{for you to leave} \\ \text{(?)how long you stayed} \\ \text{* you(r) staying so long} \\ \text{* the giving of money to UNESCO} \end{array} \right\}$
- b. *I $\left\{ \begin{array}{l} \text{doubt} \\ \text{said} \\ \text{believe} \\ \text{etc.} \end{array} \right\}$ it that he was dumb.

As the contrast in verb classes in whose complements this type of *it* appears indicates (cf. the verbs of (2.1a) vs. those of (2.1b)), this construction exists only for factive complements, a correlation which suggests to me that the source for this *it* is the noun *fact*, and that the rule that the Kiparskies refer to as *Fact Deletion*¹ should be viewed as passing through a stage of pronominalization on the way to the total obliteration of the noun which they argue to be the head of all factive complements. That is, though it is not immediately relevant to nouniness, I would suggest the two rules shown in (2.2)

- (2.2) a. *Fact* → *It*
b. *It* Deletion

What is relevant to nouniness is the environment for (2.2b). As (2.1a) shows, *It Deletion*, though generally optional with *that* and *for to*,² becomes almost obligatory before Q and totally obligatory before any elements of (1.2) that are below Q, i.e., before nounier complements than Q.

2.2. Preposition deletion

The next process which dances variably to the tune of nouniness is the rule of *Preposition Deletion*, which was first proposed, to my knowledge, in Rosenbaum (1967). Its operation can be seen in (2.3).

¹ Cf. Kiparsky and Kiparsky (1970), and also Ross (MS a), for discussions of and motivation for this rule.

² In many idiolects, a subset of factive verbs prohibits the deletion of *it* before *that*-clauses. For me, this is true of the verbs *love*, *like*, *dislike*, and *hate*.

In addition, Douglas Ross has pointed out to me that in his idiolect, no forms like those in (2.1a) are allowed. *It Deletion* thus appears to be a fairly capriciously applied rule. As far as I know, the differences in rule valency that this rule exhibits in various idiolects are not traceable back to any other properties of these idiolects.

(2.3) *Preposition Deletion*

- I was surprised $\left\{ \begin{array}{l} \text{(*at) that you had hives} \\ \text{(*at) to find myself underwater} \\ \text{(at) how far I could throw the ball} \\ \text{*(at) Jim ('s) retching} \end{array} \right\}$.

The underlying *at* which is lexically associated with *surprised* must delete before *that* and *for to*, can optionally (for many speakers) be retained before Q and must not delete before any complements of greater nouniness.

2.3. Extraposition

The next rule that interacts with (1.2) was also discussed in Rosenbaum (op. cit.), where it was referred to as *Extraposition*. It produces such sentences as those in (2.4) by doubling complement clauses of sufficiently low nouniness at the end of their matrix sentences, leaving behind the pronoun *it*.

(2.4) *Extraposition*

- It was a shame $\left\{ \begin{array}{l} \text{a. that your hens couldn't sleep} \\ \text{b. for Max to have to pay rent} \\ \text{c. how long you had to fight off the hyenas} \\ \text{d. } \left\{ \begin{array}{l} \text{?Max} \\ \text{?*Max's} \end{array} \right\} \text{ getting arrested} \\ \text{e. *Joan's unwillingness to sign} \end{array} \right\}$.

This rule is optional for *that*, *for to*, and Q complements, and is generally impossible for complements of higher nouniness. However, as Edward Klima has called to my attention, there are certain predicates, such as *be a shame*, which do weakly allow the extraposition of *Acc Ing* complements, and even more weakly, the extraposition of *Poss Ing* complements. No predicate I know of allows any complements of greater nouniness to extrapose, however.

2.4. The Island-Internal Sentential NP Constraint

The fourth syntactic phenomenon which interacts with the squish in (1.2) has to do with the output condition whose violation produces such unfortunate question sentences as those in (2.5).

- (2.5) Was $\left\{ \begin{array}{l} \text{*that the boss had warts rumoured?} \\ \text{?*that your arm was asleep noticed?} \\ \text{??for him to enter nude unexpected?} \\ \text{?why he had come obvious?} \\ \text{?him entering nude a shock?} \\ \text{Jack's applauding appreciated?} \end{array} \right\}$

The corresponding affirmative sentences are all grammatical, as the reader can verify, which suggests that the graded deviances of (2.5) are produced by violations of the following

output condition:

- (2.6) *The Island-Internal Sentential NP Constraint (I²SNPC)*
 Star any surface structure island³ of the form
 X [S]_{NP} Y, where X, Y ≠ ∅,
 the degree of violation depending on the nouniness of the internal complement.

It is necessary to restrict the X and Y in (2.6) to portions of the tree in the same island as the complement, because otherwise, this condition would throw out such sentences as those in (2.7).

- (2.7) a. I know *that he's a merman*, || but I still have a crush on him.
 b. Although *occultism is rampant*, || *for you to show up there with that stake in your heart* will cause raised eyebrows.
 c. That Boris will be delayed, || and *that Bela can't make it at all*, || is regrettable, my dear, but we shall just have to start the transmogrification without them.

The *that*-clauses in (2.7a) and the *for-to* clause in (2.7b) end and begin, respectively, their islands, as I have suggested by drawing parallel vertical lines for the relevant island-boundaries in these sentences. And since coordinated nodes form islands, the second conjunct of the subject of (2.7c) is an island of its own, and thus cannot be starred by the I²SNPC.

It appears impossible to replace (2.6) by a parallel condition which would reject only *clause-internal* sentential complements. To see this, consider (2.8), which, while its underlined sentential NP is not internal to the first clause above it (i.e., the bracketed object of *believe*), still seems to be afflicted by the sort of disease which (2.6) cures.

- (2.8) ??Homer and Jethro believe [*for us to boo now would make enemies*].

This sentential NP, though not *clause-internal* (it is the left-most element of the clause it is in), is *island-internal*, which is what has led me to formulate (2.6) in the way I have.

To return to (2.6), the very words in which it is phrased show its dependence upon the squish of (1.2). For it is obvious that such violations as those in (2.5), which (2.6) or any theoretical structure cognate to it must explain, are not of an on-off, discrete nature. Rather, the nounier the island-internal clause is, the mellower the resulting string is.⁴

³ For discussion of this term, cf. Ross (1967: ch. 6).

⁴ The failure to account for the gradations in the deviances of such sentences as (2.5) is, to my mind, the most significant fault of the early version of the I²SNPC which was informally proposed in Ross (1967) (cf. §3.1.1.3.).

And it must be regarded as an equally serious problem for any reanalysis such as that of Emonds (1970). Emonds suggests, in essence, that such structures as (2.4a-c) are more nearly basic, and that a rule whose effect is roughly the reverse of *Extrapolation* produces such sentences as those in (i).

- (i) $\left\{ \begin{array}{l} \text{That your hens couldn't sleep} \\ \text{For Max to have to pay rent} \\ \text{How long you had to fight off the hyenas} \end{array} \right\}$ is a shame.

Emonds attempts to block such sentences as (2.8) by claiming that this reverse rule (let us call it *Intrapolation* here) is a "root transformation," in his terminology (i.e., one which operates, roughly speaking, only in highest clauses). Evidently, however, if the deviances of such sentences as those in (2.5) do vary in approximately the way that I have indicated, the degree of "rootiness" of *Intrapolation* would have to vary with complementizer choice, paralleling that in (1.2). While I think that it is correct to recharacterize Emonds' important notion of root transformation in non-discrete terms (cf. Ross MS b for details), I must emphasize that even such a recharacterization could not repair the discreteness-linked difficulties in Emonds' analysis. The reason is that whatever process produces cleft sentences, like (2.12) in the text, it is clearly not a "root transformation," in Emonds' sense, nor does it have the slightest degree of rootiness, to re-view the problem non-discretely. And yet such sentences as (2.12) exhibit the same graded unacceptabilities as (2.5). Clearly, then, what is the matter with (2.5) and (2.8) cannot be that a root transformation has applied elsewhere than in a root S, for such an account would leave the parallel rottennesses of (2.12) unexplained.

Even disregarding the matter of the squishiness of the violations produced by the I²SNPC, there are a number of other independent problematical characteristics of Emonds' *Intrapolation* analysis, as Higgins has pointed out

One final wrinkle of the I²SNPC should be noted here. This is the fact that some structural environments are more "tolerant" of embedded headless nominal complements than others. I have thus far been able to isolate the four differing configurations shown in (2.9).

- (2.9) (a) $\left[\begin{array}{c} V \\ +Tns \end{array} \right] - <$ (b) $\left[\begin{array}{c} V \\ -Tns \end{array} \right] - <$ (c) *that* - < (d) clefted

To see that the four environments of (2.9) are in fact arranged according to the gravity of the violations they occasion with the I²SNPC, compare the sentences in (2.5), which correspond to (2.9a), with those in (2.10), (2.11), and (2.12), which correspond to (2.9b), (2.9c), and (2.9d), respectively.

- (2.10) a. $\left\{ \begin{array}{l} ?*Explain [that your license has expired] \text{ to the judge, lady} \\ ?? I will arrange [for the bomb to go off at noon] \text{ with the anarchist leadership} \\ ? Explain [how well you can drive without a license] \text{ to the DA, lady} \\ Explain [the speedometer ('s) being stuck at 135] \text{ to him, too} \end{array} \right\}$

- b. I consider $\left\{ \begin{array}{l} ?*that he will leave likely \\ ?? for him to leave likely \\ ? how long he went without a bath disgusting \\ \left\{ \begin{array}{l} ? him \\ his \end{array} \right\} \text{ leaving likely} \end{array} \right\}$.

- (2.11) I think that $\left\{ \begin{array}{l} ?? that we stayed on \\ ? for us to stay on \\ how long we slept \\ \left\{ \begin{array}{l} us \\ our \end{array} \right\} \text{ staying on} \end{array} \right\}$ was deplorable.

- (2.12) It was $\left\{ \begin{array}{l} that you had been a spy that I \left\{ \begin{array}{l} *thought \\ ? forgot \end{array} \right\}^5 \\ ? for the Red Sox to win that we were hoping for \\ which faction he was supporting that was hard to determine \\ \left\{ \begin{array}{l} them \\ their \end{array} \right\} \text{ being so all-fired snooty that I objected to} \end{array} \right\}$.

I have neither any explanation for the hierarchical arrangement of the environments of (2.9) nor anything more to say about it than that no account of I²SNPC phenomena which does not provide such an explanation can be considered viable.

(cf. Higgins 1973). One particularly weak point is that the *Intrapolation*-analysis forces Emonds to postulate, in order to account for bisentential verbs like *entail* and *prove*, the theoretical device of "doubly-filled nodes," which is a device of such theoretical power as to remove the explanatory power of Emonds' notion of structure-preserving rules. For example, if the S node which ends Emonds' deep structure for bisentential clauses containing verbs like *entail* and *prove* can be "doubly filled," why can't the NP node after *like*? But if this NP node can be "doubly-filled" in deep structure (Emonds bars such "doubly-filled" nodes from surface structure), then what would block (ii), in which one of the double fillers has been topicalized?

- (ii) *Football games I like the opera.

Such arguments as these suggest to me that *Intrapolation* must be rejected in favor of the earlier postulated *Extrapolation*, supplemented by the I²SNPC.

⁵ I believe it to be the case that factive *that*-clauses differ systematically from non-factive *that*-clauses, in a number of environments other than this one. I have not investigated this problem in detail, however.

2.5. Plural agreement

The next set of facts which interacts with (1.2) has to do with the question as to when conjoined NPs trigger plural agreement (cf. (2.13)).

- (2.13) a. $\left\{ \begin{array}{l} *That\ he\ lost\ and\ that\ you\ won \\ *For\ him\ to\ lose\ and\ for\ you\ to\ win \\ ??*Him\ winning\ and\ you\ losing \\ ??His\ winning\ and\ your\ losing \end{array} \right\}$ are wonderful.
- b. Jack's winning of the bingo tournament, and your losing of the hopscotch marathon, were unexpected joys.
- c. Senator Phogbottom's nomination and the ensuing rebellion in Belgrade were unforeseen by our computer.

The basic generalization is clear: the nounier a complement type is, the more plural will be any NP which results from conjoining two or more tokens of this type. Though more could be said on this topic (for instance, the question as to what happens with mixed-type conjunctions could be investigated), the basic facts seem to provide clear support for the squish of (1.2).

2.6. Extraposition from NP

The next sets of facts that provide evidence for the correctness of (1.2) are of a fundamentally different kind than the facts on which § 2.1–2.5 were based. Those sections all had to do with processes which were *external* to the complement types in question. That is, I showed how the applicability of the rules that form *it + S* constructions, that delete prepositions and that extrapose complement clauses varies with the nouniness of the complement clause in the environment, with nounier complements undergoing fewer operations than more sentential ones. And I showed that only nouny complements are immune to the stigma of the I²SNPC or can trigger plural agreement.

What I will discuss in the twelve sections to follow is a number of respects in which nounier complements are more restricted in their *internal* structure than more sentential ones. This is above all true with respect to the subjects of these complements. The generalization that holds is this: the nounier a complement is, the fewer are the types of constituents that can figure as its subject.⁶

A first example is provided by the rule I refer to in Ross (1967) as *Extraposition from NP*, a rule which optionally moves noun complements and relative clauses to clause-final position, under complicated conditions which need not concern us here. That this rule can operate freely from the subject NPs of *that*-clauses, *for to*-clauses and embedded questions is apparent from a comparison of the sentences in (2.14) and (2.15).

- (2.14) a. That a man [who was wearing size 29 Keds]_S was in this closet is too obvious, Watson, to need belaboring.
- b. For a criminal [who had no knowledge of the Koran]_S to have slipped through our cordon is too fantastic a notion to bear scrutiny.
- c. How many numbers people [who have had no previous experience]_S will have to do is not sure.

⁶ I should mention at the outset that much of my thinking about nouniness, but especially with respect to restrictions on the internal structure of nouny clauses, was stimulated by Edwin Williams' important paper, 'Small clauses in English' (1971).

- (2.15) a. That a man was in this closet [who was wearing size 29 Keds]_S is too obvious, Watson, to need belaboring.
- b. For a criminal to have slipped through our cordon [who had no knowledge of the Koran]_S is too fantastic a notion to bear scrutiny.
- c. How many numbers people will have to do [who had no previous experience]_S is not sure.

Clearly, then, there are no restrictions in principle on the application of the rule of *Extraposition from NP* from the subjects of complements of low nouniness, like these three. The situation is different, however, with regard to complements of greater nouniness. For me, the facts are as shown in (2.16).

(2.16) *Extraposition from NP*

- a. $\left\{ \begin{array}{l} A\ man \\ ?\ *A\ man's \end{array} \right\}$ trying to register who was wearing no under-garments was most upsetting, most.
- b. *A student's careless combining of the ingredients who doesn't know about sodium and water could ruin the punch.
- c. *An old friend's visit to Rio who I hadn't seen for years cheered me considerably.
- d. *An old friend's hat who I hadn't seen for years hung on the book.

Thus I find a sharp decrease in acceptability here as soon as any extraposition is attempted from possessivized subjects of complements.⁷ It is quite possible that this is a consequence of the Left Branch Condition (cf. Ross (1967), § 4.4 for a definition of this condition), but since my present purposes do not require me to evaluate this possibility, I will not go into it further here. What *is* clear is that the contrast between (2.15) and (2.16) is in line with, and provides further support for, the squish in (1.2).⁸

2.7. Fake NPs

In this subsection, I will examine a number of idiomatic and expletive subject NPs, in an attempt to show that they are hierarchically arranged, as in (2.17).

⁷ The ungrammaticality of the second sentence of (2.16a) was first noticed by Williams (1971), who drew from this ungrammaticality the conclusion that *Poss Ing* complements differ structurally from *that* and *for-to* complements in being "smaller" than these, by virtue of not containing a sentence-final slot for extraposed clauses (Williams does not use the term "slot," and ties in his observation to Emonds' notion of structure-preserving rules, but the basic idea is highly similar to the more familiar concept of "slot," so I have used this term here.)

I do not think, however, that Williams' conclusion is justified. Extraposed clauses *can* appear in *Poss Ing* complements, and even in complements of greater nouniness, as shown in (i), (ii), and (iv) below.

- (i) Harry's sending all those tubas to her which we hadn't checked out was a disaster.
- (ii) Your patient repeating of all the lessons to me which I had missed through oversleeping certainly made me respect your self-control.
- (iii) *A man's attempt to visit this plant who hadn't been fingerprinted led to a security crackdown.
- (iv) The attempt of a man to visit this plant who hadn't been fingerprinted led to a security crackdown.

The contrast here between *(iii) and (iv), which are presumably transformationally related, suggests strongly that what is not allowed is the extraposition of clauses from possessivized subjects, not the absence of a slot for extraposed clauses in nouny complements.

⁸ Again, here, as elsewhere, I unfortunately have no explanation for the fact that the judgments concerning *Extraposition from NP* are almost binary, where this is not the case with other nouniness-linked phenomena.

$$(2.17) \quad \text{tack} > \left\{ \begin{array}{l} \text{it weather/-be} \\ \text{headway} \end{array} \right\} > \left\{ \begin{array}{l} \text{it sentential} \\ \text{there} \end{array} \right\} > \left\{ \begin{array}{l} \text{it weather/...V} \\ \text{tabs} \end{array} \right\}$$

The inequality signs in (2.17) are to be interpreted as meaning the following: if, for any two elements, A and B, of (2.17), $A > B$, then wherever B is possible, A is possible, but not conversely. I base (2.17) on the judgments below.⁹

(2.18) *Take a tack*

This tack('s) being taken on pollution disgusts me.

(2.19) *Weather it with copular predicates and make headway*

- a. $\left\{ \begin{array}{l} \text{It} \\ ? \text{Its} \end{array} \right\}$ being muggy yesterday kept the Colts out of the cellar.
- b. $\left\{ \begin{array}{l} \text{Significant headway} \\ ? \text{Significant headway's} \end{array} \right\}$ being made on this by March is unlikely.

(2.20) *Sentential it and there*

- a. $\left\{ \begin{array}{l} \text{It} \\ * \text{Its} \end{array} \right\}$ being possible that the Rams will sweep is staggering.
- b. $\left\{ \begin{array}{l} \text{There} \\ * \text{There's} \end{array} \right\}$ being no beer was a nightmare.

(2.21) *Weather it with verbs and keep tabs on*

- a. $\left\{ \begin{array}{l} \text{It} \left\{ \begin{array}{l} ?? \text{raining} \\ ? \text{having rained} \end{array} \right\} \\ * \text{Its} \left\{ \begin{array}{l} \text{raining} \\ \text{having rained} \end{array} \right\} \end{array} \right\}$ threw me off-stride.
- b. $\left\{ \begin{array}{l} ? \text{Close tabs} \\ * \text{Close tabs's} \end{array} \right\}$ being kept on my domestics is an affront.

I refer to the subjects of these sentences as "fake NPs" because it is possible to demonstrate in other areas, as well as in the subjects of nouny complements, that they do not exhibit the full range of syntactic behavior which can be observed with non-idiomatic, non-expletive NPs.¹⁰

The generalization that I would like to suggest about such facts (in my dialect) as those in (2.18)–(2.21) is that while some idioms, like *take a tack on*, which are relatively compositional,

⁹ I must point out here that it has become clear to me as a result of presenting this material in a number of lectures, that dialectal variation in this area is particularly rampant. In particular, there are dialects which violate the squish in (1.2)—dialects in which *its raining* is better than *it raining*. At present, I have not been able to detect any clear groupings among dialects with respect to these facts—the situation just seems chaotic. Robert Greenberg has suggested that the judgments of many informants may be being colored by the inveighing of prescriptive grammarians against the whole *Acc Ing* construction, especially when it appears in subject position. The perceived dialectal chaos would, then, have one component of significant linguistic restrictions (of some at present unguessable sort) and another—very strong—component of Miss Fidditchitis.

I am both attracted to and repelled by this mode of explanation. What attracts me is my intuition that it is right (cf. Morgan 1972 for some illuminating discussion of a (probably) similar case). What repels me is the capaciousness of the escape hatch that it opens here, unless we can develop some kind of litmus for Miss Fidditchitis, so that it can be agreed upon in advance as to the conditions under which it is justifiable to bring in Miss Fidditch to extricate the beleaguered grammarian from a chaotic situation.

At any rate, I have elected to present here the (=my) facts about the interaction of fake NPs and complements containing *ing*-forms in the belief that when the correct balance of grammar and Fidditch has been established here, an interaction with the nouniness squish will be demonstrable.

¹⁰ This matter is discussed at length in Ross (1973).

and non-idiomatic,¹¹ can appear freely in passive form in *Ing*-complements, other fake NPs are more restricted. The best of the remaining fakes are the *it* of copular weather predicates like *be muggy*, *be foggy*, *be fair*, etc. and the noun (?) *headway* in the idiom *make headway*. Following these, for me, are the *it* of *Extraposition* and the expletive *there*: while the presence of the possessive morpheme merely weakens the sentences in (2.19), it degammaticalizes those in (2.20). And for the final two fakes, weather *it* with true verbs like *drizzle*, *hail*, *sleet*, etc., and the noun (?) *tabs*, it seems to be difficult to construct sentences which contain complements with the verbs of these items appearing in an *ing*-form.¹²

Thus for my dialect, the facts of fake NPs bear out the squish of (1.2). Any fake NP that can occur possessivized can also occur as the subject of an *Acc Ing* complement, but the converse is not true.

2.8. Possessivizability of complements

A related restriction is apparent from the fact that only highly nouny complements can possessivize. To see this, contrast the sentences of (2.22) with those of (2.23)–(2.24).¹³

- (2.22) a. That the odor is unpleasant is understandable.
b. The odor's being unpleasant is understandable.
- (2.23) a. ??That that you have to go to Kuhkaff is unpleasant is understandable.
b. ?That for you to have to visit Mildred is unpleasant is understandable.
c. ?That how long you have to stay there is unpleasant is understandable.
d. That you having to sleep with the goat is unpleasant is understandable.
e. That your having to comb your bed-mate is unpleasant is understandable.
f. That your feelings towards Mildred are unpleasant is understandable.
- (2.24) a. **That you have to go to Kuhkaff's being unpleasant is understandable.
b. **For you to have to visit Mildred's being unpleasant is understandable.
c. *How long you have to stay there's being unpleasant is understandable.
d. *You having to sleep with the goat's being unpleasant is understandable.
e. ?*Your having to comb your bed-mate's being unpleasant is understandable.

¹¹ That idiomaticity is a squishy property, and not a discrete one, has been perceived by many previous researchers. For a challenging and significant attempt to cope, within the framework of a discrete transformational grammar, with the fact that some idioms are more frozen than others, cf. Fraser (1970).

Parenthetically, it does not seem correct to me to claim, as Paul Ziff has suggested to me (personal communication), that *take a tack on* is not idiomatic at all. While it is true that the noun *tack*, especially with regard to its use in sailing, can appear in a far greater number of contexts than can the noun *tabs*, it is still the case that *tack*, in its metaphorical meaning, is far more restricted than near synonyms like *approach* and *slant*.

- (i) This $\left\{ \begin{array}{l} ?? \text{tack on} \\ \text{approach to} \end{array} \right\}$ the problem of security is important.
- (ii) This $\left\{ \begin{array}{l} ? \text{tack on} \\ \text{approach to} \end{array} \right\}$ unemployment is familiar from the WPA.
- (iii) I fear this $\left\{ \begin{array}{l} ? \text{tack} \\ \text{slant} \end{array} \right\}$ on boldness.
- (iv) This $\left\{ \begin{array}{l} ? * \text{tack on} \\ \text{approach to} \end{array} \right\}$ the problem of opacity has been successful in the past.

Thus I would argue, at present, that *tack*, in the meaning of 'approach,' is in fact "idiomatically connected" to *take*, even though the collocation is low on the idiomaticity squish.

¹² The noun (?) *advantage* of the idiom *take advantage of* is similar to *tabs* in its restrictedness, but I have not been able to decide whether it is loose enough to go in with the items in (2.20) or whether it should be put in (2.21).

¹³ The awkwardness of the earlier sentences in (2.23), which have been included here only to make the parallel to (2.24) complete, is of course a result of the I²SNPC.

- e. ??Having to comb your bed-mate's being unpleasant is understandable.
 f. ??Your combing of your bed-mate's being unpleasant is understandable.
 g. Your feelings toward Mildred's being unpleasant is understandable.

Except for the contrast between (2.24e) and (2.24e'), which suggests that subjectless complements are nounier than ones with subjects, these facts seem self-explanatory. They are exactly what would be predicted from (1.2).

A further comment is in order, however: it is easy to show that the requirement that only highly nouny phrases can be possessivized is itself a squishy restriction, for there are some environments which weight this restriction more heavily than others. In particular, the environment sub-squish in (2.25) is easily demonstrable.

(2.25) [NP __ Ving X] >> [NP __ N]_{NP}

(2.25) merely asserts that possessives with plain nouns are far more restricted than possessives which are the subjects of *ing*-complements. To see this, merely substitute *unpleasantness* for *being unpleasant* in (2.22b) and (2.24). (2.22b) remains grammatical, but all of the sentences in (2.24) take a giant step outward: only (2.24g) retains any vestiges of Englishness. This refinement thus indicates the need for replacing the judgments of (2.24) by a matrix in which they would be a column.

There is a final, more general, point that can be made now. The facts considered so far in this section, and the facts presented in §2.8, show that possessivizability requires a high degree of nouniness. (2.24) demonstrate the necessity for subjects of *Poss Ing* complements to be highly nouny. And (2.23) (and (2.11)) showed the necessity for subjects of *that*-clauses not to be too sentential. But what of the subjects of, say, *for to*-complements? Compare (2.24) and (2.26).

- (2.26) a. *For that you have to go to Kuhkaff to be unpleasant is understandable.
 b. **For for you to have to visit Mildred to be unpleasant is understandable.¹⁴
 c. *For how long you have to stay there to be unpleasant is understandable.
 d. ?*For you having to sleep with the goat to be unpleasant is understandable.
 e. ?For your having to comb your bed-mate to be unpleasant is understandable.
 e' For having to comb your bed-mate to be unpleasant is understandable.
 f. For your feelings toward Mildred to be unpleasant is understandable.

Apparently, then, (2.23) > (2.26) > (2.24). This suggests the following generalization.

(2.27) The nounier a complement is, the nounier its subject must be.

Why there should be such a linkage as that specified in (2.27), and why it should not also obtain for objects, are at present mysteries for which I cannot suggest answers.

2.9. Quantifiability of complement subjects

A further restriction on complement subjects (unless it is somehow reducible to (2.27)) is that only fairly sentential complements can have subjects incorporating quantifiers. The relevant facts are shown in (2.28).

- (2.28) a. That many people are willing to leave is surprising.
 b. For many people to be willing to leave is surprising.

¹⁴ Possibly the extra dollop of badness of this sentence is caused by the double *for*. I have no other explanation for it.

- c. For how long many people are willing to leave is surprising.
 d. ?Many people being willing to leave is surprising.
 e. ??Many people's being willing to leave is surprising.
 f. *Many people's tickling of *Felis Leo* was ill-advised.
 g. *Many people's willingness to leave is surprising.

2.10. Quantifier postposing

A further restriction involving subjects and the nouniness squish has to do with a rule that I will refer to as *Quantifier Postposing*. This rule converts such sentences as (2.29a) into (2.29b) or (2.29c).

(2.29) a.

$$\left\{ \begin{array}{l} \text{All} \\ \text{Both} \\ \text{Each} \\ \text{Several} \\ \text{Some} \\ \text{Five} \end{array} \right\} \left(\left(\begin{array}{l} \text{three} \\ \text{nine} \\ 729 \end{array} \right) \right) \text{ of } \left\{ \begin{array}{l} \text{them} \\ \text{us} \\ \text{the children} \end{array} \right\} \text{ hate Spam.}$$

b.

$$\left\{ \begin{array}{l} \text{They} \\ \text{We} \end{array} \right\} \left\{ \begin{array}{l} \text{all} \\ \text{both} \\ \text{each} \\ \text{*several} \\ \text{*some} \\ \text{*five} \end{array} \right\} \left(\left(\begin{array}{l} \text{three} \\ \text{?nine} \\ \text{*729} \end{array} \right) \right) \text{ hate Spam.}$$

c.

$$\text{The children} \left\{ \begin{array}{l} \text{all} \\ \text{both} \\ \text{each} \\ \text{*several} \\ \text{*some} \\ \text{*five} \end{array} \right\} \left(\left(\begin{array}{l} \text{three} \\ \text{?nine} \\ \text{729} \end{array} \right) \right) \text{ hate Spam.}$$

As is apparent, this rule only affects universal quantifiers, among which, *all* can be followed by a small number, but only if the quantified NP is pronominal. Thus *Quantifier Postposing* applies in subject position more freely from pronouns than from full NPs, a fact which shows up even more clearly in object position, where no postposing is possible at all, except from

pronouns. Cf. (2.30):

- (2.30) I inspected $\left\{ \begin{array}{l} \text{them} \\ \text{us} \\ \text{*the children} \end{array} \right\} \left\{ \begin{array}{l} \text{all} \\ \text{both} \end{array} \right\}$

This fact, that this rule is more restricted in object position than in subject position, is argued in Ross (MS b) to constitute evidence for a general notion of primacy, defined roughly in (2.31).

- (2.31) Node A of a tree *has primacy over* node B of a tree if A is an element of a sentence that dominates B, or when A and B are clause-mates, if A is to the left of B.

I argue further that primacy figures in a far-reaching constraint, roughly that stated in (2.32).

- (2.32) *The Primacy Constraint*

If a rule applies to node B, or in environment B, it must also apply to node A, or in environment A, for all nodes A that have primacy over B.

In other words, while (2.32) would admit the possibility of a process applying only in subject position, it would rule out any process applying only in object position. And while processes may be less restricted in subject position than in object position, (2.32) predicts that the opposite will never be the case.

The primacy constraint is obviously related to the important NP accessibility hierarchy developed in Keenan and Comrie (1972), though their emphasis differs slightly from that of Ross (op. cit.): their concern is the construction of a more finely graded primacy relation than that described in (2.31). The notion they arrive at is justified by examination of relative clause strategies in a wide range of languages, while (2.32) seeks to cover a broader set of rules. The two approaches should not, of course, be viewed as being in conflict. I hope that when my own research has progressed far enough, it will be possible for me to argue that the Keenan-Comrie notion of accessibility can be extended to constrain the application of all rules, as has been done with subject-object primacy in (2.32).

To return to the main concerns of the present paper, *Quantifier Postposing* interacts with nouniness in the following way: the rule is only applicable to the subjects of complements of a low nouniness. Cf. (2.33):

- (2.33) a. That they both were re-elected is disgusting.
 b. For them both to be renominated would drive me to despair.
 c. Why they both must be cackling at the prospect of being able to sit on us for another term is revealed in this report.
 d. ?Them both trying to muzzle the press is a frightening omen.
 e. ?*Their both having succeeded to such a large extent bespeaks worse to come.
 f. *Their both rattling of sabers in foreign policy is an old, old song.
 g. *Their both love of demonstrators is legion.

The contrast between (2.29) and (2.30) above shows *Quantifier Postposing* to be subject to the Primacy Constraint, and (2.33) shows it to be limited by nouniness.¹⁵ If such parallels crop up in a significant number of other cases, it will be necessary to modify the definition of primacy in (2.31) to incorporate nouniness as a part of it.

¹⁵ There is another process, similar to *Quantifier Postposing*, which also dances to the tune of nouniness. This process converts (i) into (ii) (and later (iii)?):

- (i) $\left\{ \begin{array}{l} \text{Both} \\ \text{All} \\ \text{Each} \\ \text{None} \end{array} \right\}$ of them will be drinking from it.

2.11. PP subjects

Another area in which the nouniness of a complement interacts with a restriction pertaining to subjects has to do with certain cases of the output of the rule of *Copula Switch*, the rule which permutes subject and object NPs around the main verb *be* in such pseudo-cleft sentences as those in (2.34).

- (2.34) a. What I found was a poisoned grapenut.
 b. What I realized was that we were being duped.
 c. What I attempted was to mollify the enraged ducks.
 d. Where we slept was under the bathtub.
 e. What I have never been is taciturn.

The rule of *Copula Switch* converts these to the corresponding sentences of (2.35).

- (2.35) a. A poisoned grapenut was what I found.
 b. That we were being duped was what I realized.
 c. To mollify the enraged ducks was what I attempted.
 d. Under the bathtub was where we slept.
 e. Taciturn is what I have never been.

What is of immediate interest for my present purposes is such sentences as (2.35d), which have prepositional phrase subjects. As the sentences in (2.36) suggest, these subjects must be regarded as being NPs (in part), because they can undergo such processes as *Verb-Subject Inversion*, *Raising*, *Passive*, and *Tag Formation*.

- (ii) They $\left\{ \begin{array}{l} \text{?both} \\ \text{all} \\ \text{??each} \\ \text{?none} \end{array} \right\}$ of them will be drinking from it.
 (iii) They will $\left\{ \begin{array}{l} \text{both} \\ \text{all} \\ \text{?each} \\ \text{none} \end{array} \right\}$ of them be drinking from it.

This process might appear to provide problems for the hypothesis that there is a nouniness squish, for consider (iv):

- (iv) a. That they all of them solved it is wonderful.
 b. *For them all of them to solve it would be a miracle.
 c. How they all of them solved it is not known.
 d. *Them all of them solving it was great.
 e. ??Their all of them solving it was fabulous.
 f. *Their all of them rapid solving of it is encouraging.
 g. **Their all of them final solution to it is ingenious.

If this process is interacting with a squish, however, why are (ivb) and (ivd) worse than the next-nounier sentences? One answer, pointed out to me by George Williams, is that this process, however it is to be formulated, prefers to work from nominative NPs and will not work from oblique NPs. Cf. *(v).

- (v) *I drove them all of them crazy.

The process is not overjoyed when it applies to possessive NPs, but if I am right in my feeling that (ive) > (ivf) > (ivg), it would appear that nouniness plays a role in its operation.

Incidentally, it may be the case that the non-standard oblique case which shows up with coordinated pronouns is enough to weaken the output of this rule, if I am right in hearing (vib) as being slightly defective.

- (vi) a. He and I have both of us worked on this.
 b. ?Him and me have both of us worked on this.

- (2.36) a. Was under the bathtub where we slept?
- b. They believe under the bathtub to be where we slept.
- c. Under the bathtub is believed to be where we slept.
- d. Under the bathtub is where we slept, isn't it?

These facts thus tend to support the familiar conclusion that PPs, though obviously different from NPs in many ways, should at some deep level be considered to be merely a kind of NP.¹⁶

However, it is easy to show that they are somewhat "fake," in the sense of Ross (1973): when the structure underlying copula-switched pseudo-clefts like (2.35d) appear in nounier complements, the fakeness of their subject NP produces deviances of progressively greater seriousness.

- (2.37) a. That under the bathtub is where you slept is staggering.
- b. ?For under the bathtub to be where you sleep would crimp our social life.
- c. ?Why under the bathtub was where he slept has baffled modern Napoleonology for decades.
- d. ??*Under the bathtub being where you sleep will upset the negotiations.
- e. *Under the bathtub's being where you slept must have been a real down.¹⁷

¹⁶ I am indebted to Tony Kroch and Howard Lasnik for calling to my attention the existence of such interesting and unstudied sentence as (i).

- (i) Under the bathtub

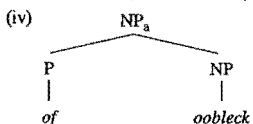
}	is a nice place
	is comfortable
	?pleased Milty
	??stinks

Their point was that while it might be possible to proceed sentences like (2.36) and (i) to the conclusion that locative and directional PPs are NPs, the broader claim that *all* PPs are NPs could not be supported by such sentences, which can only be constructed for locatives and directionals.

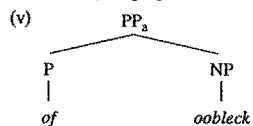
While I find their objections well-taken in the present case, there is additional evidence for the broader identification of PP and NP from the fact that pied piping affects NPs and PPs equally, from the fact that almost all superficially non-prepositional NPs show up in other syntactic contexts with prepositions associated with them, and from the fact that prepositional phrases are almost always islands (i.e., in only a few languages is it possible for prepositions to be stranded: in most languages, only sentences corresponding to (ii) below can be found.)

- (ii) Of what does your Greas-o Shortening consist?
- (iii) What does your Greas-o Shortening consist of?

The fact that most languages do not permit the objects of prepositions to move away, stranding the preposition, as in (iii), can be shown to derive from a general principle to the effect that such immediately self-dominating constituents as NP_a in (iv) below generally form islands. But this explanation is only available if prepositional phrases are self-dominating nodes, as in (iv).



If instead, some more traditional structure for PP, like (v), is postulated, another explanation for the general unstrandability of prepositions must be sought.



¹⁷ No nounier complements than *Poss Ing* can be checked, because pseudo-cleft sentences will not appear in nounier environments (a fact which itself argues for a hierarchically structured list of complement types). However, it is easy to show the inadmissibility of PP subjects in nounier environments, using the Kroch-Lasnik constructions mentioned in note 16. Cf. the ungrammaticality of (i).

Thus the distribution of complements with PP subjects again supports the implicational hierarchy proposed in (1.2).

2.12. AP subjects

Mutatis mutandis, the behavior of AP subjects of such copula-switched pseudo-cleft sentences as (2.35e) above is exactly the same, with the exception that they seem to be systematically worse than the corresponding copula-switched pseudo-clefts with prepositional phrase subjects. Compare (2.37) and (2.38).

- (2.38) a. ?That taciturn is what you think I am is incredible.
- b. ??*For taciturn to be what I strive to be would be wasted effort.
- c. ??Why loquacious is what they have always been puzzles me.¹⁸
- d. *Taciturn being what I want to be but am not makes for grey days.
- e. **Taciturn's being what Sam is has earned him a reputation as a hard-nose poker player.

In fact, of course, the other two copula-switched sentences of (2.35) that have abstract subjects, namely (2.35b) and (2.35c), are also restricted when these structures appear as complements themselves, as was pointed out in part in connection with (2.27) above. A summary of how the complements in (1.2) interact with the constraint in (2.27) is provided by the chart in (2.39).

(2.39)

Fillers Frames	N Der. Nom. Act. Nom.	Poss Ing	Acc Ing	PP	for NP to V X	that S	AP
that __ V X	OK	OK	OK	OK	?	??	?
for __ to V X	OK	OK	OK	?	*	*	?*
wh-X __ V Y	OK	OK	OK	?	?	?	??
__ Ving X	OK	OK	?	?*	??	??	*
__'s Ving X	OK	?	??	*	*	**	**

In general, (2.39) is almost entirely "well-behaved," in the sense of Ross (1973). That is, in each row, the transition from grammaticality to ungrammaticality, as the row is scanned from left to right, is monotonic. For a matrix to be well-behaved, the vertical transition from grammaticality to ungrammaticality must also be monotonic. The flies in the ointment here are, for example, the fourth cell of the fourth row from the top, which is *horizontally*

- (i) *Under the bathtub's niceness exceeds over the stove's.
That we do not have to do here merely with a restriction on possessives can be seen from *(ii).
- (ii) *The niceness (of) under the bathtub exceeds the niceness (of) over the stove.

¹⁸ If the squish in (1.2) were the only thing influencing the grammaticality of such AP-subject pseudo-cleft sentences, we would predict that (2.38c) should be no better than (2.38b). That it does seem to be slightly better suggests that some other factor may be influencing things here. I have nothing to propose at present.

ill-behaved, being more ungrammatical, for unknown reasons, than the cells to its left and right. I indicate such horizontal ill-behavior by including two vertical lines in this cell. The same notation is used to point up the horizontal ill-behavior of the fifth and sixth cells of the second row, which are, in addition, also *vertically ill-behaved*, as is indicated by the parallel horizontal lines enclosing them and the only other such cell, the seventh cell of the third row. As they stand, such ill-behaved cells constitute counter-evidence to the claim that the complement types we have been investigating do form a squish, and unless other factors can be isolated which can be used to dispose of such ointment-flies, we will be driven to the conclusion that even more radical departures from present linguistic theory than that which well-behaved matrices necessitate must be admitted. For the time being, however, let us assume that (2.39) represents the interaction of a well-behaved matrix—a squish—with some additional factors. This matrix is evidently in line with what (1.2) predicts.

2.13. Fake NPs in object position

Fairly nouny complements seem to exclude fake NP objects, with the degree of deviance being proportional to the fakeness of the object. Thus compare (2.40) and (2.41) with (2.42).

- (2.40) a. That he took this tack repeatedly cost him my vote.
 b. For them to make headway rapidly would be encouraging.
 c. How long we will keep tabs on him accurately has not been decided yet.
- (2.41) a. His taking this tack repeatedly cost him my vote.
 b. Their making headway rapidly is encouraging.
 c. Our keeping tabs on him accurately may prove invaluable.
- (2.42) a. ??His repeated taking of this tack cost him my vote.
 b. *Their rapid making of headway is encouraging.
 c. **Our accurate keeping of tabs on him may prove invaluable.

Again, results in this direction are to be expected, given (1.2), though why there should be such a sudden jump here between (2.41) and (2.42) remains to be explained.

2.14. Promotion

I will assume that a rule that I will, following a suggestion of Paul Postal's, refer to as *Promotion*, converts such sentences as those in (2.43) to the corresponding ones in (2.44).

- (2.43) a. Jim's disregarding the consequences shocked me.
 b. Jim's disregarding of the consequences shocked me.
 c. Jim's disregard for the consequences shocked me.
- (2.44)
- | | | | | | | | |
|-------------------|---|---|-------------|---|---|-----------------------------------|---|
| a. Jim shocked me | { | { | by | } | — | disregarding the consequences | } |
| | | | *with | | | | |
| | | | ?by | | | his disregarding the consequences | |
| | | | ?*with | | | | |
| | | | } | | | | |
| b. Jim shocked me | { | { | ??by *(his) | } | } | disregarding of the consequences. | |
| | | | ?with his | | | | |
| | | | } | | | | |
| c. Jim shocked me | { | { | ?*by *(his) | } | } | disregard for the consequences. | |
| | | | with his | | | | |
| | | | } | | | | |

This rule copies the subject of the complement into the subject of the matrix verb, while postposing the complement and adjoining a preposition to it. The rule works for all predicates of the class of *shock, surprise, amaze, please, disgust*—the verbs which form adjectives in *-ing*—and for all of these, *by* is the preposition that is inserted if the complement is a *Poss Ing* construction. The preposition *with* cannot, for many speakers, be inserted under *Promotion* unless the complement is nounier than *Poss Ing*. With action nominals, both prepositions are somewhat acceptable, though the construction itself seems difficult then.¹⁹ With derived nominals, all dialects, to the best of my knowledge, show a marked preference for *with*. Furthermore, as is clear from (2.44), while *by* favors the deletion of the pronominal copy of the promoted NP, *with* is only possible if this copy is retained.

The facts of (2.44), no matter whether I am correct in assuming that it derives from (2.43) or not, argue strongly that there is a hierarchy of nouniness. What goes with the sentency end of the hierarchy are the preposition *by* and deletion of the pronominal copy, while *with* and pronoun retention go with the nouny end. Many other logically thinkable assignments of grammaticality valences to the sentences in (2.44) would not be compatible with such a hierarchical account. The fact that the observed data are compatible with such an account thus supports the postulation of a hierarchy.

2.15. Negation

The general law here is stated in (2.45).

- (2.45) Nouniness is incompatible with (unincorporated) negation.

The facts that originally drew my attention to this generalization were cited by Howard Lasnik in another connection (cf. Lasnik 1972). He noted such contrasts as those in (2.46).

- (2.46) a. That not everyone passed the exam upset Ted.
 b. ?For not everyone to pass the exam would upset Ted.
 c. ?*Not everyone's passing the exam upset Ted.

If we extend (2.46) to (2.47), by adding in the other complement types, we find grammaticalities which are in accord with (2.45).

- (2.47) a. That not everyone will refuse our offer is expected.
 b. ?For not everyone to refuse our offer is expected.
 c. ?Under what circumstances not everyone will refuse our offer is the subject of a heated debate.
 d. ??Not everyone refusing our offer was expected.
 e. ??Not everyone's refusing our offer was expected.
 f. **Not everyone's refusing of our offer was a surprise.
 g. **Not everyone's refusal of our offer was a surprise.²⁰

¹⁹ I should emphasize that this reluctance on the part of *Promotion* to apply to action nominals is counterevidence to the claim that action nominals are part of the squish in (1.2).

²⁰ Some speakers may accept (2.47f) and (2.47g), with a meaning like that suggested in (i), where it is *be a surprise* that is being negated,

- (i) It is not the case that { everone's { refusing } our offer was a surprise }
 { it was a surprise that everyone refused our offer }

but this reading is irrelevant for our present purposes. What is being asserted is that (2.47f) and (2.47g) do not have any readings (for me, at least) on which they are synonymous with (2.47a).

Actually, the situation with regard to negation is more complex than has been indicated so far, with factors other than nouniness playing a role. For reasons unclear to me, some negative items are more offensive to nouny complements than others. The hierarchy that seems correct for my speech is shown in (2.48).

- (2.48) Post-verbal *seldom* > Post-verbal *never* >
 Pre-verbal *not* > Pre-verbal *never* >
no in subject > *few* in subject > *not* in subject

When this hierarchy intersects with the nouniness hierarchy, the sub-squish shown in (2.49) results.

(2.49)

	Post-verbal <i>seldom</i>	Post-verbal <i>never</i>	Pre-verbal <i>not</i>	Pre-verbal <i>never</i>	<i>no</i> in subject	<i>few</i> in subject	<i>not</i> in subject
<i>That S</i>	OK	OK	OK	OK	OK	OK	OK
<i>for NP to V X</i>	OK	OK	OK	OK	OK	?	?
Q	OK	OK	OK	OK	OK	<u>OK</u>	?
<i>Acc Ing</i>	OK	!?	OK	OK	??	??	??
<i>Poss Ing</i>	?	!?!?	?	??	!*	?*	?*
Act. Nom.	??	?*	*	*	**	**	**
Der. Nom.	?*	*	**	**	**	**	**

(2.50) (2.51) (2.52) (2.53) (2.54) (2.55) (2.47)

The evidence for setting up this matrix is drawn from the sentences in (2.50)–(2.55) below, and from (2.47), with each column of the matrix corresponding to the sentences indicated by the number at the bottom of that column.²¹

- (2.50) a. [That he prepares dinner *seldom*] is good for her health.
 b. [For him to prepare dinner *seldom*] is good for her health.
 c. [Why he prepares dinner *seldom*] is well-known.
 d. [Him preparing dinner *seldom*] is good for her health.

²¹ The brackets around the subject clauses of (2.50) and (2.51) are meant to indicate that the adverbs *seldom* and *never* are to be taken as modifiers of the embedded predicate, not as modifiers of the matrix predicate, where they would not produce the desired kind of ungrammaticality.

- e. [His preparing dinner { *often* }²² *seldom*] is good for her health.
 f. [His preparing of dinner { ?*often* }²³ *seldom*] is good for her health.
 g. [His preparation of dinner { ??*often* }²³ *seldom*] is good for her health.

- (2.51) a. [That he prepares dinner *never*²⁴] is good for her health.
 b. [For him to prepare dinner *never*] is good for her health.
 c. [Why he prepares dinner *never*] is well-known.
 d. ?[Him preparing dinner *never*] is good for her health.
 e. ??[His preparing dinner *never*] is good for her health.
 f. ?*[His preparing of dinner *never*] is good for her health.
 g. *[His preparation of dinner *never*] is good for her health.
- (2.52) a. That he does not prepare dinner is good for her health.
 b. For him not to prepare dinner is good for her health.
 c. Why he does not prepare dinner is good for her health.
 d. Him not preparing dinner is good for her health.
 e. ?His not preparing dinner is good for her health.
 f. *His not preparing of dinner is good for her health.
 g. **His not preparation of dinner is good for her health.²⁵
- (2.53) a. That he never prepares dinner is good for her health.
 b. For him never to prepare dinner is good for her health.
 c. Why he never prepares dinner is well-known.
 d. Him never preparing dinner is good for her health.
 e. ??His never preparing dinner is good for her health.
 f. *His never preparing of dinner is good for her health.
 g. **His never preparation of dinner is good for her health.
- (2.54) a. That no children prepare dinner is good for her health.
 b. For no children to prepare dinner is good for her health.
 c. Why no children prepare dinner is well-known.
 d. ??No children preparing dinner is good for her health.
 e. *No children's preparing dinner is good for her health.
 f. **No children's preparing of dinner is good for her health.²⁶
 g. **No children's preparation of dinner is good for her health.²⁶

²² The slight, but I think clear, difference in grammaticality between (2.50e) with *often* and the same string with *seldom* is a clear proof that negativity is at least part of the cause of the deviance of the strings in (2.50e), (2.50f), and (2.50g).

²³ The fact that even *often* produces awkwardness in sentences like (2.47f) and (2.47g) is due to the fact that post-verbal adverbs of all types are frowned on in nouny environments. What is preferred is for these adverbs to be adjectivalized and to be moved to pre-verbal (actually, prenominal) position. This need is particularly urgent for adverbs in *-ly* (**his decision rapidly* >> *his rapid decision*), slightly less so for adverbs which are homophonous with their adjectival forms (like *hard* and *fast*: ?*this decision fast* > *his fast decision*), and may even be slightly less than that for forms like *often*, which are unambiguously adverbial, and are thus excluded prenominally (?*his absence often* << **his often absence*).

Cf. Ross (1972a) for further illustrations of the squishy connection between nouniness and pre-predicate position.

²⁴ Sentence-final position is difficult for *never* in the best of cases. The sentences all seem to be extremely emphatic. Possibly it is this emphatic flavor that is behind the systematic downshift from (2.50) to (2.51).

²⁵ The fact that *non-preparation* in place of *not preparation* in (2.52g) improves this sentence markedly is the reason for restricting (2.45) with the parenthesized modifier that appears there. But this leaves us with the mystery of why such negative-incorporated forms as *never*, *no*, and *few* still produce violations.

²⁶ Some speakers may find (2.54f) and (2.54g) acceptable, but presumably, only when it is the predicate *good* that is being negated, parallel to the grammatical but irrelevant readings mentioned in note 20.

- (2.55) a. That few children prepare dinner is good for her health.
 b. ?For few children to prepare dinner is good for her health.
 c. ?*Why few children prepare dinner is well-known.
 d. ??Few children preparing dinner is good for her health.
 e. *Few children's preparing dinner is good for her health.
 f. **Few children's preparing of dinner is good for her health.
 g. **Few children's preparation of dinner is good for her health.

Not only are the three horizontally and the one vertically ill-behaved cells of (2.49) unexplained at present, it is also a total mystery as to why the items in (2.48) should be ordered in the way they are. I can discern no intuitive basis for *not* causing more "trouble" for equally nouny complements when it appears in subjects than when it appears pre-verbally, etc., etc.

Nevertheless, the fact that such a squishoid matrix as (2.49) should be constructible at all is extremely telling evidence for the correctness of the claim that the complement types of (1.2) are hierarchically arranged.

2.16. NP Shift

This rule, called "Complex NP Shift" in Ross (1967), moves post-verbal heavy NPs to the end of clauses that otherwise would have to limp along with a fat constituent in their midst. Thus it converts (2.56a) into (2.56b).

- (2.56) a. The Patent Office found [a proposal to power jumbo jets by giant rubber bands, instead of by pollution-producing oil by-products]_{NP} intriguing.
 b. The Patent Office found intriguing [a proposal to power jumbo jets by giant rubber bands, instead of by pollution-producing oil by-products]_{NP}.

Interestingly, however, this rule seems to balk at shifting headless complements, unless they are fairly nouny. Thus, though several of the sentences in (2.57) are rendered inoperative because they violate the I²SNPC, *NP Shift* is not allowed to fix them up by postposing the offending internal complement, as the corresponding sentences in (2.58) attest.

- (2.57) a. *I found that Ron had lied to us like that disgraceful.
 b. ?*I found for Ron to lie to us like that disgraceful.
 c. ?*I found who Ron had lied to when disgraceful.
 d. ?I found Ron lying to us like that disgraceful.
 e. I found Ron's lying to us like that disgraceful.
 f. I found Ron's adroit suppressing of the data disgraceful.
 g. I found Ron's lies to us disgraceful.

- (2.58) a. *I found disgraceful that Ron had lied to us like that.
 b. *I found disgraceful for Ron to lie to us like that.
 c. ?*I found disgraceful who Ron had lied to when.
 d. ??I found disgraceful Ron lying to us like that.
 e. ?I found disgraceful Ron's lying to us like that.
 f. I found disgraceful Ron's adroit suppressing of the data.
 g. ?I found disgraceful Ron's lies to us.²⁷

The facts seem fairly straightforward here: the less nouny a complement is, the worse will be the result when this complement is postposed by the rule of *NP Shift*. The only further point

²⁷ This sentence may strike some as weak, but presumably only because the shiftee, *Ron's lies to us*, is not "heavy" enough. If supplemental modifiers adorn this phrase, (2-58g) becomes fine, for me.

that seems worthy of note here is that if some such restriction as this is the correct one to impose on *NP Shift*, then some operation other than this rule must be responsible for the clause-final position of the bracketed complements in such sentences as those in (2.59).

- (2.59) a. I explained to Jason [that I had no intention of leaving].
 b. I would urge strongly [for there to be a new trial].
 c. He enquired of us [where we had left his batteries].
 d. We took into consideration Mildred ??('s) having been heavily sedated at the time.²⁸

It is possible that all that is necessary is to state the restriction on *NP Shift* that the ungrammaticalities in (2.58) show to be necessary in such a way as to mention the material that the prospective shiftee is to cross over, with its passage not being restricted by non-nouniness if it is only to cross over a prepositional phrase, adverb, or idiom chunk (namely, *into consideration*), as in (2.59), while being prohibited from crossing over such predicates as *disgraceful*.

On the other hand, it may be that the output of the crossing of an element of the first type (say a prepositional phrase) is structurally distinct from the output of a crossing of a predicate. Thus note that (2.60a), where the shiftee has crossed a prepositional phrase, allows a piece of the bracketed moved constituent to be questioned more easily than is possible in (2.60b), where the bracketed shiftee has crossed an adjective. Compare (2.61a) and (2.61b).

- (2.60) a. He found for them [a previously unpublished photo of that Surf God].
 b. He found objectionable [a previously unpublished photo of that Surf God].
 (2.61) a. ?Which Surf God did he find for them a previously unpublished photo of ?
 b. ?*Which Surf God did he find objectionable a previously unpublished photo of?

To my ear, the two sentences in (2.60) also seem to be different in intonation—the *b*-sentence requires a far bigger pause than is necessary in the *a*-sentence.

However, since these facts, though interesting, do not seem to bear directly on the way *NP Shift* interacts with nouniness, I will leave them for future research.

2.17. Determiners

An exceedingly interesting set of sentences, from the point of view of the theory of English complementation, is the one exemplified by (2.62).

- (2.62) "In my work in both France and Italy much looking, *much simple being there* preceded any photography."²⁹

What kind of complement can the italicized phrase in (2.62) be? The word *much* is elsewhere a (prenominal) quantifier, and *simple* is an adjective. This would indicate that what follows is a noun. But though *being* can be a count noun, as in (2.63),

- (2.63) The beings on that remote planet appear to be able to survive without Wonderbread.

²⁸ For some reason, sentences seem considerably weirder when their sentence-final complements are *Acc Ing* clauses than when they are *Poss Ing* clauses. I have no explanation for this fact, but must call attention to it, because my theory would lead me to predict that such restrictions on only one element of the ordering in (1.2) should not exist. Thus, the badness of the *Acc Ing* version of (2.59d) should be seen as a counterexample to the claim that the elements of (1.2) form a squish.

²⁹ My italics. This sentence is due to Paul Strand, from *US Camera*, 1955, as quoted in *The New Yorker Magazine*, March 17, 1973.

it can be shown that *being there* in (2.62) functions as the "VP" of an *Acc Ing* (or *Poss Ing*) complement. To see this, note that such *ing*-phrases can have various transformational rules apply to them which, as is correctly observed in Chomsky (1970), cannot be applied in action nominals. Thus, compare the grammatical sentences of (2.64), which have the same kind of construction as (2.62), with the ungrammatical, transformed, versions of the action nominals in (2.65).

- (2.64) a. This looking $\left\{ \begin{array}{l} \text{up addresses} \\ \text{addresses up} \end{array} \right\}$ has got to stop.
 b. No giving $\left\{ \begin{array}{l} \text{lumpy cigarettes to freshmen} \\ \text{freshmen lumpy cigarettes} \end{array} \right\}$ will be tolerated.
 c. Some simple showing $\left\{ \begin{array}{l} \text{that it is necessary to wash them} \\ \text{it to be necessary to wash them} \end{array} \right\}$ may be requested.
- (2.65) a. Bill's looking $\left\{ \begin{array}{l} \text{up of addresses} \\ \text{*of addresses up} \end{array} \right\}$ was efficient.
 b. Your generous giving $\left\{ \begin{array}{l} \text{of lumpy cigarettes to freshmen} \\ \text{*freshmen of lumpy cigarettes} \end{array} \right\}$ has been approved of.
 c. Sam's quick showing $\left\{ \begin{array}{l} \text{that it is necessary to wash them} \\ \text{*of it to be necessary to wash them} \end{array} \right\}$ was masterful.

The stars in (2.65) show that the rules of *Particle Movement*, *Dative*, and *Raising* must not be applied in action nominalizations. But they may be in constructions of the type shown in (2.62) and (2.64).

A final type of evidence which would seem to render implausible any analysis which treated the *ing*-forms in such sentences as some kind of lexical noun is provided by such sentences as those in (2.66), which show that it is possible for such *ing*-forms to be based on auxiliaries.

- (2.66) a. That having been followed for years must have been nerve-wracking.
 b. This being seduced continually is kind of fun.
 c. That having had to pay early must have crimped your vacation plans.

The only conclusion that one can draw here, as far as I can see, is that it is possible for *Poss Ing* complements (or possibly even for *Acc Ing* ones—which kind cannot be decided, as far as I know) to co-occur with certain determiners, like *this/that, much, no*, etc. Whatever this type of *ing*-complement derives from ultimately, there are arguments that they must have subjects in underlying structure, as is suggested by the reflexives in (2.67) and standard transformational arguments about *Equi*.

- (2.67) a. This having to defend himself seems to be bugging Melvin.
 b. That wanting to throw herself into the shredder must have been difficult for Gloria.

Moreover, it is even possible to cite examples which show that what follows these determiners is a clause which actually manifests a subject, albeit in a postposed position. Cf. the sentences in (2.68).

- (2.68) a. ?This coming home late of Janet's has got to stop.
 b. No more telling lies on the part of $\left\{ \begin{array}{l} \text{officials} \\ \text{?Mayor Fresca} \\ \text{*you (and Ted)} \end{array} \right\}$ ³⁰ will be condoned.

³⁰ I do not understand why only some of the subjects in (2.68b) are grammatical. Possibly there is some restriction pertaining to genericity that must be imposed. I have not looked into this problem in sufficient detail.

Though this is not the time to delve deeply into the syntax of this fascinating construction, the relevance that it has for the study of the nouniness of the complement types in (1.2) should have become apparent. For, though it has been claimed that there is a sharp, binary distinction between derived nominals and the other complement types in (1.2), in that only the former type "has the internal structure of a noun phrase"³¹—i.e., determiners—in fact, we find some determiners occurring with types which exhibit such non-nouny behavior as taking auxiliaries and making aspectual differences (cf. (2.67)), and modifying clearly derived "VPs". In other words, the ability to take determiners seems not to be a binary, yes-no, matter, but rather one of degree.

In my speech, there is a hierarchy of "noun-requiringness" of determiners, with those on the left end of the hierarchy occurring in a wider range of contexts than those on the right.

$$(2.69) \text{ ? NP's } > \left\{ \begin{array}{l} \text{this} \\ \text{that} \end{array} \right\} > \left\{ \begin{array}{l} \text{no} \\ \text{some} \\ \text{much} \\ \text{little} \end{array} \right\} > \left\{ \begin{array}{l} \text{the} \\ \text{prior} \\ \text{occasional} \\ \text{frequent} \end{array} \right\} > \left\{ \begin{array}{l} \text{careful} \\ \text{reluctant} \\ \text{etc.} \end{array} \right\} > \left\{ \begin{array}{l} \text{good} \\ \text{bad} \end{array} \right\} > \left\{ \begin{array}{l} \text{other} \\ \text{mere} \end{array} \right\}$$

When intersected with the nouniness hierarchy of (1.2), (2.69) produces the subsquish shown in (2.70).

(2.70)

	NPs	<i>this that</i>	<i>no some much little</i>	<i>the prior occasional frequent</i>	<i>careful reluctant etc.</i>	<i>good bad</i>	<i>other mere</i>
<i>that S</i>	*	*	*	*	*	*	*
<i>for NP to V X</i>	*	*	*	*	*	*	*
Q	*	*	*	*	*	*	*
$\left\{ \begin{array}{l} \text{Acc} \\ \text{Poss} \end{array} \right\}$ <i>Ing with Aux</i>	OK	OK(?)	?	*	*	*	*
$\left\{ \begin{array}{l} \text{Acc} \\ \text{Poss} \end{array} \right\}$ <i>Ing w/o Aux</i>	OK	OK	OK	?	?*	*	*
Action Nominal	OK	OK	OK	OK	OK	OK	?*
Derived Nominal	OK	OK	OK	OK	OK	OK	OK(?)
N	OK	OK	OK	OK	OK	OK	OK

(2.71) (2.72) (2.73) (2.74) (2.75) (2.76) (2.77)

As was the case in (2.49), the facts corresponding to each column of (2.70) are given in the example sentences corresponding to the number at the bottom of the column.³²

³¹ Cf. Chomsky (1970: 188–90).

³² I have not distinguished between *Acc Ing* and *Poss Ing* complements in (2.70) because, as noted above, I can see no way to do so.

(continues)

- (2.71) a. *Ed's (that he) refused her offer angered me.³³
 b. *Ed's (for him) to refuse her offer angered me.
 c. *Ed's (when he) refused her offer angered me.
 d. Ed's having refused her offer angered me.
 e. Ed's refusing her offer angered me.
 f. Ed's refusing of her offer angered me.
 g. Ed's refusal of her offer angered me.
 h. Ed's garbage angered me.
- (2.72) a. *That (that Ed) refused her offer angered me.³⁴
 b. *That (for Ed) to refuse her offer angered me.
 c. *That (when Ed) refused her offer angered me.
 d. ?? That having refused her offer angered me.³⁵
 e. That refusing of her offer angered me.
 f. That refusal of her offer angered me.
 g. That garbage angered me.
- (2.73) a. *Some (that Ed) refused her offer angered me.
 b. *Little (for Ed) to refuse her offer angered me.
 c. *No (when Ed) refused her offer angered me.
 d. i. No being arrested will be tolerated.³⁶
 ii. ?? Some being arrested is expected.
 iii. ?? Little having preregistered has been reported.

Instead, I have distinguished between *ing*-clauses whose main verb is an auxiliary and those whose main verb is a true verb, for these two types seem to differ systematically with respect to determiner choice, with the latter being nounier than the former.

³³ The first three rows of (2.70) are so bad that writing them seems almost academic. With or without the parenthesized material, I doubt whether any speaker can be found who could use *a*-, *b*-, or *c*-versions of (2.71)–(2.77). But, for the record, here they are.

³⁴ Of course, with properly placed pauses—after *this* and *offer*—the string of words in (2.72a) is grammatical. Needless to say, ...

³⁵ I do not know why this sentence is worse than those in (2.66). In general, the differences between the first two columns of (2.70) are small, if indeed any exist. This is why I have placed a question mark above the first inequality sign in (2.69), and a question mark in parentheses in the second box from the left of row four of (2.70). Basically, my intuitions are as follows: sometimes, under conditions which I cannot do out, *this/that* preceding an *ing*-phrase will produce a worse NP than would a sequence of NPs followed by the same *ing*-phrase. The reverse, however, never obtains: NP's + *ing*-phrase is never worse than *this/that* + *ing*-phrase.

The cases where I have been able to find differences all involve auxiliaries or other stative present participles as *ing*-forms. Cf. (ii)–(vi).

(ii) $\left\{ \begin{array}{l} \text{Ed's} \\ \text{??That} \end{array} \right\} >$ seeming to like pizza angered me.

(iii) Her soup's containing arsenic was suspicious.

(iv) ??*That containing arsenic (*of her soup (*'s)) was suspicious.

(v) The children's looking as if they've been fed is a nice surprise.

(vi) ??This looking as if they've been fed is a nice surprise.

Since it does not seem that much hangs on being able to distinguish NPs and *this/that* in (2.69), I will leave the matter here.

³⁶ The sentences in (2.73d), all of which contain an *ing*-ed auxiliary, are a mixed lot. Sometimes, as in (2.73di), it appears to be possible to follow members of the class *no/some/much/little* by such an *ing*-form, but in general, they are weaker than they would be if *this/that* preceded the same *ing*-form, as such minimal pairs as ?? (2.72d) and *(2.73dv) attest. Note also that bad though the *this/that*-versions of (ii), (iv) and (vi) of note 35 are, they are far worse with one member of the set *no/some/much/little*. Clearly, matters are much more complex here than can be handled in a paper of such limited scope as this one, but since all the inequalities I now know of [i.e., inequalities like ?? (2.72d) > *(2.73dv)] seem to point in the same direction, I have tentatively concluded that *this/that* should be separated from the set in column 3 of (2.70).

- iv. ?? Much having been wined and dined was acknowledged by the Congressmen.
 v. *No having refused her offer (on the part of the Roman generals) was recorded.
- e. i. No looking at feelthy rugs will be allowed.
 ii. ? Much giving gum to strangers was reported.
 iii. ? *Much giving strangers gum was reported.
 f. Some refusing of her offers was expected.
 g. No refusal of her offer is contemplated.³⁷
 h. Some garbage angered me.
- (2.74) a. *The (that Ed) refused her offer angered me.
 b. *Prior (for Ed) to refuse her offer angered me.
 c. *Occasional (when Ed) refused her offer angered me.
 d. i. *Frequent being followed angered me.
 ii. *Prior having replied is frowned on.
 iii. ? The having been fired on was predictable.³⁸
 e. i. The looking at feelthy rugs was anticipated.
 ii. ? Occasional looking at feelthy rugs was reported.
 iii. ?? Frequent giving false data out is to be expected.
 iv. ?? *Occasional giving gum to strangers was reported.
 v. *Occasional giving strangers gum was reported.
 f. Ed's/the occasional/prior/frequent refusing of her offers was to be expected.
 g. Occasional/Prior/Frequent refusals of her offers have been reported.
 h. The garbage angered me.³⁹
- (2.75) a. *Careful (that Ed) refused her offer angered me.
 b. *Reluctant (for Ed) to refuse her offer angered me.
 c. *Clever (when Ed) refused her offer angered me.
 d. *(Ed's/That/The) careful having looked at the evidence angered me.
 e. i. ??*(Ed's/That/The) thoughtless looking at the evidence angered me.
 ii. *(Ed's/That/The) sneaky looking the answer up angered me.
 f. Ed's/That/The reluctant refusal of her offer angered me.
 g. Ed's/That/The greedy refusal of her offer angered me.
 h. The careful doctor angered me.
- (2.76) a. *Good (that Ed) refused her offer angered me.
 b. *Bad (for Ed) to refuse her offer angered me.
 c. *Bad (when Ed) refused her offer angered me.

³⁷ Note that *much* and *little* are excluded before nominalizations like *refusal* for an interesting, but irrelevant, reason. Namely, it is typically the case that nominalizations of non-stative predicates like *refuse* are count nouns (*many hops/examinations/changes/commands*, etc.), while nominalizations of stative predicates are mass nouns (*much knowledge/hatred/cleverness/expressivity/agreement*, etc.). This striking parallel between non-stative/count and stative/mass remains to be explained. Since *much* and *little* only modify mass nouns, **much/little refusal* is ungrammatical.

³⁸ Sentences like this strike me as being far superior to other sentences of the type of (2.74d), so possibly I am wrong in placing *the* in the fourth column of (2.70). I have not collected enough data to warrant drawing any firm conclusions, so I will leave the matter open.

³⁹ Such phrases as **occasional/prior/frequent garbage* are, of course, nonsense, for selectional reasons. I would say that these adjectives only modify derived nominals, treating such nouns as *blizzard* (cf. *the occasional blizzards*), *mistake* (cf. *frequent mistakes*), *notice* (cf. *prior notice*) etc. as deriving from underlying predicates which have associated with their lexical representations an output condition to the effect that they must be nouns in surface structure. Whether or not such an analysis is tenable, it is clear that the ill-formedness of **occasional garbage* need not concern us further.

- d. *Ed's bad having been had has finally been noticed.⁴⁰
 e. ?*The good paying attention to us both continued.
 f. i. *Ed's bad refusing of her offer angered me.
 ii. *Ed's good demonstrating of undecidability angered us.
 iii. *Ed's bad solving of the enigma angered me.
 g. i. ??Ed's bad refusal of her offer angered me.⁴¹
 ii. Ed's good demonstration of undecidability angered me.
 iii. Ed's bad solution to the enigma angered me.
 h. The bad garbage angered me.
- (2.77) a. *The mere (that Ed) refused her offer angered me.
 b. *Another (for Ed) to refuse her offer angered me.
 c. *A mere (when Ed) refused her offer angered me.
 d. *(Ed's/That/The) other being followed home angered me.
 e. i. *The mere looking at classified documents is forbidden.
 ii. *Other giving gum to strangers is most strictly forbidden.
 f. i. ??The mere collecting of specimens got Mike jailed.
 ii. *The other solving of the enigma will occur shortly after 2 a.m.
 g. i. ?A mere attempt at reconciliation would be viewed with suspicion.
 ii. ?*Bill's mere belief that everything would work out all right in the end drew upon him the scorn of the villagers.
 iii. ?Their mere presence might cause a riot.
 iv. *His mere operation of this vehicle while blasted is grounds for incarceration.
 v. Another attempt at reconciliation would be viewed with suspicion.
 vi. *Bill's other belief that everything would work out all right in the end drew upon him the scorn of the villagers.
 vii. ?*Their other presence in the jam cupboard resulted in a spanking.
 viii. ?Sam's other marriage to a Venusean took only 3 months.
 ix. Selma's other suggestion about what to do with the rolling pin met with a frosty silence.
 h. i. A mere boy could solve it.
 ii. The other garbage angered me.

A word about (2.77): sentences like those in (2.77g), a mixed bag, admittedly, are the basis for my feeling that *mere* and *other* may require even nounier head nouns to modify than *good/bad*. I know of no systematically excluded class of non-derived nouns which are bad when preceded by *mere* and *other*,⁴² but it does seem that many derived nominals do not co-occur with these two modifiers. However, since some do (e.g., (2.77g.v) and (2.77g.ix)), it may well be that it is not nouniness at all that is sorting the sheep from the goats here, and that there is in fact no demonstrable difference between derived and non-derived nouns with respect to the determiners that they co-occur with. If this is so, (2.70) will become one column narrower, and one row shorter, but will otherwise remain unchanged. Pending further study, I have

⁴⁰ Some of these, inexplicably, sound far better than they have any right to. Cf. (i)–(ii).

(i) ?That bad being idolized will have to stop soon.
 (ii) ?This good having been notified that we're getting a tax refund makes me glow with pride.

Unsurprisingly, I have no explanations to offer here.

⁴¹ I do not know what other facts about *refuse* differentiate it from *demonstrate* and *solve*. The important thing to note, for the purposes of (2.70), is that while some derived nominals are modifiable by *good/bad*, no action nominals appear to be so modifiable.

⁴² Except that *mere* + mass noun (e.g., ?? *mere wine*) is generally pretty weird.

question-marked the last '>' of (2.69) and the corresponding cell of (2.70)—the seventh from the left of the seventh row from the top.

What is to be concluded from the data in (2.71)–(2.77)? Briefly, it would appear that the predicate *has the internal structure of an NP* cannot be treated as if it were a binary predicate, with phrases either having such a structure or not having it. Rather, with respect to the determiners they co-occur with, the elements of (1.2) would appear to approach true nouns [i.e., the nouniest elements] gradually. Thus action nominals have a determiner structure which is *more* similar to that of a noun phrase headed by a non-derived noun than is the determiner structure of such *ing*-phrases as those in (2.62), (2.64), and (2.66)–(2.68). And that of derived nominals is *more* similar than that of action nominals. But the subsquish in (2.70) does not give any indication that there is any row between the fourth and the eighth at which one could justify such a statement as "Complements above this row do not have the internal structure of an NP, while complements below do." To be sure, there is a clear break between the third and fourth rows—*no* determiners at all occur with the complement type of the first three rows. But as I showed, with respect to other syntactic properties—such as the possibility of marking aspectual differences, and the ability of derived structures to occur, the rows above row three share much with those below. I thus conclude that the facts of determinerizability support the hypothesis that there is a gradual progression—a squish—from *Acc/Poss + Ing* to N.⁴³

2.18. Accessibility and chopping

In the last twelve subsections of §2, I have cited a variety of ways in which complements become more restricted in their internal structure as they become nounier. In the first five sections of §2, I had discussed a number of respects in which the complement types of (1.2) affected their neighbors in the clause (i.e., expletive *it*, prepositions, agreeing verbs, etc.) differentially. And now, in the concluding subsections, I will discuss some respects in which the nouniness of a complement type interacts with processes involving variables, in the sense of Ross (1967)—processes which link elements which asymmetrically command the complement type with elements which the complement type commands.

I have called the phenomena discussed in §§ 2.1–2.5 "external" phenomena, and those in §§ 2.6–2.17 "internal" phenomena. Let us refer to this last type of phenomena as *accessibility*

⁴³ I might note in passing that as far as another test for "internal structure of an NP"—namely pluralizability—goes, there seems to be a squish here too. Non-derived Ns pluralize fine (cf. (i)),

- (i) a. The cat is on the mat.
 b. The cats are on the mat.

and so do derived nominals (cf. (ii)),

- (ii) a. The attempt to self-destruct was made on Friday.
 b. The attempts to self-destruct were made on Friday.

but plurals are difficult, if possible at all, with action nominals, as (iii)–(v) show.

- (iii) a. His marshalling of my data takes him all day.
 b. ??His marshallings of my data take him all day.
 (iv) a. Their weakening of a previous claim was to be expected.
 b. ?Their weakenings of previous claims were to be expected.
 (v) a. His discussing of the problems was helpful.
 b. *His discussings of the problems were helpful.

This particular index of nouniness draws a firm line above action nominals—plurals with *Poss Ing* are a bad dream.

- (vi) **His havings gone off his diet so many times will not surprise you.

phenomena. The reasons for using the same term as in Keenan and Comrie (op.cit.) should become clear as we proceed.

The general principle which we shall see several instances of is stated in (2.78).

- (2.78) The nounier a complement is, the less accessible are the nodes it dominates to the nodes which command the complement.

As a first particular case of (2.78), let us examine the interaction of nouniness and chopping rules,⁴⁴ rules which extract some constituent from under the domination of another constituent and reattach it elsewhere in the tree. One such rule is *Question Formation*, which chops a question word from its underlying location and moves it (leftwards) towards the question-taking predicate that binds it.⁴⁵ As we would infer from (2.78), this type of chopping should become harder and harder as the complement type whose constituent is being chopped gets nounier and nounier. Cf. (2.79).

- (2.79) a. I wonder who he resented (it) that I went steady with.
 b. I wonder who he would resent (it) for me to go steady with.
 c. *I wonder who he resented how long I went steady with.⁴⁶
 d. ?I wonder who he resented me going out with.
 e. ??I wonder who he resented my going out with.
 f. ?*I wonder who he resented my careless examining of.
 g. ?*I wonder who he resented my careless examination of.⁴⁷
 h. ?*I wonder who he resented the daughter of.⁴⁸

In general, *pace* note 47, the dwindling Englishness of the sentences in (2.79) supports (2.78).

⁴⁴ Cf. Ross (1967: ch. 6) for more discussion of this term.

⁴⁵ For an excellent discussion of this rule from the standpoint of universal grammar, cf. Bach (1971).

⁴⁶ (2.79c) is worse than (2.78) would lead us to expect, but this is for an irrelevant reason—namely, in the embedded question which is the complement of *resent* in (2.79c), the questioned phrase has passed over the clause *he went out with who*. It is a general fact about such “crossed over” clauses that their constituents cannot be chopped. Thus when *Topicalization*, a chopping rule, fronts the NP *Marjorie* to clause-initial position in the complement object of *said* in converting (i) to (ii), the direct object becomes unchoppable, as *(iii) shows.

- (i) They said that we should give these books to Marjorie.
 (ii) They said that Marjorie we should give these books to.
 (iii) *It is these books that they said that Marjorie we should give to.

I would attribute the badness of *(2.79c) to the same factors that make *(iii) unfit for duty, which means that the former sentence does not constitute counterevidence to the claim that the sentences in (2.79) are a column of the nouniness squish.

For further discussion, cf. Ross (MS c).

⁴⁷ There is a large and poorly understood class of counterexamples, known in the trade as *picture-nouns* (cf. Ross 1967 and Postal 1971 for discussion), to the generalization that nouny complements prohibit chopping.

Thus beside *(2.79g) and *(2.79h), we find such grammatical sentences as (i) and (ii),

- (i) I wonder who you read a description of.
 (ii) I wonder who he is a friend of.

where *description* and *friend* are the *picture-nouns*, derived and (superficially) non-derived, respectively, in question.

Unless some *deus ex pictura* should materialize in future studies of this class of nouns, the generalization implicit in (2.79) cannot be maintained.

⁴⁸ Many speakers I have asked find (2.79h) fine, thus presumably treating *daughter* as a *picture-noun*, to name the problem which such a grammaticality presents. For me, however, it is very weak.

2.19. Sloppiness

The next accessibility phenomenon concerns what I have referred to as “sloppy identity” (cf. Ross (1967), Chapter 5). Basically, the problem is that of characterizing when the reading of (2.80) corresponding to (2.81b) is possible.

- (2.80) Ed_i said_E that he_i was sincere, and Mort_j said_M so too.

- (2.81) a. Ed_i said_E that he_i was sincere, and Mort_j said_M that he_j (=Ed_i) was sincere too.
 b. Ed_i said_E that he_i was sincere, and Mort_j said_M that he_j (=Mort_j) was sincere too.

Under the assumption that (2.80) can be derived from either of the sentences in (2.81) by a rule of *So Pronominalization*,⁴⁹ we see that while (2.81a) could be converted into (2.80) by merely inserting *so* for the object clause of *said_M* in (2.81a), which clause is morpheme-for-morpheme identical to and coreferential with the object clause of *said_E*, to convert (2.81b) to (2.80) by *So Pronominalization*, obviously a different sort of identity will be required, for the objects of *said_E* and *said_M* in (2.81b), though morphemically identical, are not identical when it comes to the references of their subject pronouns. This new type of identity I referred to as *sloppy identity*.

Of relevance for the present investigation of nouniness is the fact that sloppy readings are harder to obtain as the complements being deleted get nounier and nounier. Cf. (2.82), in which the grammaticality judgments correspond only to the reading of this sentence under which Mort's resentment is directed at my examination of Mort.

- (2.82) a. Ed resents (it) that I examined him, and Mort does too.⁵⁰
 b. Ed resents (it) for me to examine him, and Mort does too.
 c. Ed resents (it) how often I examined him, and Mort does too.
 d. ?Ed resents me having examined him, and Mort does too.
 e. ?Ed resents my having examined him, and Mort does too.
 f. ??Ed resents my careful examining of him, and Mort does too.
 g. ??Ed resents my careful examination of him, and Mort does too.

Thus it would seem that nouniness is one of the many factors that bear on the question of when sloppy readings exist.⁵¹

2.20. Pied piping

In Ross (1967), I used this term to describe the phenomenon shown in (2.83).

- (2.83) a. Bill, who I sent you a picture of, is cranky.
 b. Bill, of whom I sent you a picture, is cranky.
 c. Bill, a picture of whom I sent you, is cranky.

When sentence (2.84) is embedded as an appositive clause modifying *Bill*,

- (2.84) I sent you a picture of Bill.

the Rule of *Relative Clause Formation* has several ways of applying. It can front only the relative pronoun *who*, which corresponds to *Bill* in (2.84)—the NP identical to the modified NP.

⁴⁹ Cf. Ross (1972b) for examples of this rule's operation.

⁵⁰ For arguments that the anaphoric second conjunct of the sentences in (2.82) is produced by a transformational deletion, cf. Ross (1969).

⁵¹ Some others will be discussed in Ross (MS d).

Or it can front, in addition, the preposition *of*, producing (2.83b). Or it can even front a larger NP which contains *whom*, as in (2.83c). When material other than the relative pronoun is fronted, I will say that such material undergoes *pied piping*—it “travels along” with the fronted *who*.

The basic rule for *pied piping* that was arrived at in Ross (1967) is that stated approximately in (2.85).

- (2.85) If one NP (NP_m) is moved by a rule, any NP (NP_d) which dominates it can move with it, as long as there is no node S_i such that NP_d dominates S_i and S_i dominates NP_m .

In other words, when moving some NP_m , any higher NP_d can pied pipe, unless there is an intervening S_i . This restriction is necessary, because otherwise the *that*-clause of (2.86), which many syntactic tests show to be an NP, could pied pipe when (2.86) is an appositive clause modifying *Eloise*, as in (2.87). If only the relative pronoun is fronted, the grammatical (2.87a) results. But if the *that*-clause pied pipes, the hash in (2.87b) ensues.

- (2.86) They liked it [NP_d that we loved [NP_m Eloise]].
- (2.87) a. Eloise, who they liked it that we loved, is an accomplished washboardiste.
b. *Eloise, [NP_d that we loved [NP_m whom]] they liked (it), is an accomplished washboardiste.

What makes the phenomenon of pied piping relevant in the present context is the fact that it can be shown that the condition mentioning S_i in (2.85) must be squishified. That is, the correct restriction should read something like (2.88).

- (2.88) If NP_m is moved by a transformation, NP_d may pied pipe with it. If a complement node intervenes, the more sentential (i.e., the less nouny) it is, the less well-formed the resultant pied-piped construction will be.

The need to replace (2.85) by (2.88) becomes apparent from the sentences in (2.89), all of which have pied piped a larger complement in addition to the relative pronoun.

- (2.89) a. *Eloise, [for us to love [whom]] they liked, is an accomplished washboardiste.
b. *Eloise, [us loving [whom]] they liked, is an accomplished washboardiste.
c. *Eloise, [our loving [whom]] they liked, is an accomplished washboardiste.
d. ?*Eloise, [our loving of [whom]] they liked, is an accomplished washboardiste.
e. ?Eloise, [our love for [whom]] they liked, is an accomplished washboardiste.⁵²
f. Eloise, [a part of [whom]] they liked, is an accomplished washboardiste.

Many additional factors interact in the syntax of such pied pipings, which makes the view of the phenomenon which (2.89) provides somewhat inaccurate. Without going into the detail that these problems merit, let me single out two such factors for mention.

First, if the complement to be pied piped has no subject, things are significantly improved. Thus compare the *a*- and *b*-versions of (2.90)–(2.92) below.

- (2.90) a. *Eloise, [for us to renominate [whom]] will be expensive, is a consummate triangularian.
b. ??Eloise, [to renominate [whom]] will be expensive, is a consummate triangularian.

⁵² (2.89e) is worse than most sentences in which derived nouns pied pipe. In general, I have not been able to discover any systematic differences between pied piping (obviously) derived nouns and (apparently) non-derived ones. The difference which appears between (2.89e) and (2.89f) seems to be idiosyncratic.

- (2.91) a. ??Eloise, [our renominating [whom]] may prove counterproductive, can sing in several keys simultaneously.
b. ?Eloise, [renominating [whom]] may prove counterproductive, can sing in several keys simultaneously.

- (2.92) a. ?Eloise, [his renominating of [whom]] was greeted by storms of boos, is peerless on the suaronophone.
b. Eloise, [the renominating of [whom]] was greeted by storms of boos, is peerless on the suaronophone.

Secondly, if the complement is in subject position, the sentences are better than if it is necessary to lug it to the front via pied piping. Thus compare the *a*- and *b*-versions of (2.93)–(2.94) below.

- (2.93) a. ??Eloise, [to invite [whom]] had been attempted by the Board, wanted to wear sneakers.
b. *Eloise, [to invite [whom]] the Board had attempted, wanted to wear sneakers.
- (2.94) a. ?Eloise, [inviting [whom]] has profited us immensely, was a smash hit with the Under-77 Set.
b. *Eloise, [inviting [whom]] we have profited from immensely, was a smash hit with the Under-77 Set.

I will leave a more thorough scrutiny of these constructions to future researchers, but it should have already become clear, from the increases in grammaticality that can be perceived from (2.87b) to (2.89f), from (2.90) to (2.92), and from (2.93) to (2.94), that a squishified version of the pied piping constraint, one like (2.89), is what the facts indicate to be necessary.

2.21. Pied wiping

Jorge Hankamer has proposed⁵³ this name for the deletion rule that obliterates under identity the complements of certain types of verbs when they appear in various types of comparative structures. This rule is what effects the optional conversion of (2.95a) to (2.95b).

- (2.95) a. Mandrake was wiler than Lothar

thought
suspected
knew
realized

 [that he_i was].
- b. Mandrake was wiler than Lothar

thought
suspected
knew
realized

The verbs in curly brackets in (2.95) all take *that*-clauses, and we see from the conversion of (2.96a) to (2.96b) that infinitival complements can also be pied wiped, for *want* only takes *for* to complements.

- (2.96) a. Ted woke up earlier than I had wanted [him to wake up].
b. Ted woke up earlier than I had wanted.

However, as far as I have been able to ascertain, nounier complements than *for to* cannot be pied wiped. Thus if *contemplate* and *think about*, which take *Acc/Poss Ing*-complements, lose them via *Pied Wiping*, weak sentences are derived.

⁵³ In a paper with the same title as this section, which was presented at the third annual meeting of the North East Linguistic Society, at the University of Massachusetts, Amherst, Massachusetts, October, 1972.

- (2.97) a. He woke up earlier than he had contemplated [waking up].
 b. ?? He woke up earlier than he had contemplated.
- (2.98) a. He woke up earlier than he had thought about [waking up].
 b. ??* He woke up earlier than he had thought about.

And if *Pied Wiping* applies to the complement of *achieve*, which, as (2.99) shows, takes a complement at least as nouny as an action nominal,

- (2.99) Milt achieved $\left\{ \begin{array}{l} *to\ convert \\ *converting \\ ??the\ converting\ of \\ the\ conversion\ of \end{array} \right\}$ 7000 rebels.

we get a solidly ungrammatical sentence, *(2.100b).

- (2.100) a. Milt converted more rebels than I thought that he would achieve [the conversion of].
 b. *Milt converted more rebels than I thought that he would achieve.

Thus *Pied Wiping* must be constrained by a condition specifying that the prospective wipee not be overly nouny.

2.22. Control for VP deletion

The rule of *VP Deletion*, some effects of whose operation we saw in the second clauses of (2.82) above, prefers a sentency complement as a controller for its operation—i.e., as the chunk of structure under identity with which a “VP”⁵⁴ elsewhere in the text can be deleted.⁵⁵ This is obvious from inspection of the sentences in (2.101), in which the dash marks the remote location of the deleted node.

- (2.101) a. That he inspected more latrines than the other generals would ___ is fascinating.
 b. For him to have inspected more latrines than the other generals would ___ is fascinating.
 c. How resolutely he inspected more latrines than the other generals would ___ is fascinating.
 d. Him having inspected more latrines than the other generals would ___ is fascinating.
 e. His having inspected more latrines than the other generals would ___ is fascinating.
 f. ??His inspecting of more latrines than the other generals would ___ is fascinating.
 g. ??*His inspection of more latrines than the other generals would ___ is fascinating.

Thus it would appear that nominalizing a clause makes the verb and objects of this clause unfit as a controller for the rule of *VP Deletion*, the more so the nounier the result is.

Note that if we restore the verb *inspect* in all the blanks in (2.101), thus producing sentences which, presumably, have been formed by whatever rule makes this type of comparatives, we produce another set of sentences, (2.101a')–(2.101g'), whose grammaticality also dwindles,

⁵⁴ Some of the reasons for my belief that there is no such category as VP are contained in McCawley (1970).
⁵⁵ The term “controller” was first used in this sense in Postal (1970), in connection with the rule of *Equi*.

but, to my ear at least, less rapidly than in the original sentences in (2.101). In particular, (2.101f') and (2.101g') have, for me, the following grammaticalities.

- (2.101) f' ?His inspecting of more latrines than the other generals would inspect is fascinating.
 f' ??His inspecting of more latrines than the other generals would inspect is fascinating

Thus it appears that the ‘?’ and ‘??’ valences of (2.101f) and (2.101g) are in actuality the products of nouniness-linked constraints on two rules. The first, *Comparative Formation*, which forms the sentences in (2.101a')–(2.101g') [in conjunction with other rules, of course], lowers the grammaticality of (2.101f) and (2.101g) to ‘?’ and ‘??’, respectively, as shown above. The second, *VP Deletion*, applying to the output of the first, weakens these valences another notch apiece, producing the values observed for (2.101f') and (2.101g').

Thus, apparently the sentences in (2.101) provide two pieces of evidence for a squish of nouniness.⁵⁶

2.23. Control for *do it* and *do so*

The source which I regard as correct for the anaphoric elements *do it* and *do so* which appear in (2.102)

- (2.102) After Casey started massaging his gums, all the managers started $\left\{ \begin{array}{l} \text{doing it} \\ \text{doing so} \end{array} \right\}$.

I have discussed in Ross (1972b). Whether or not the proposed source is correct, however, the rules which link such pro-forms to their controllers must have the same kind of nouniness-related condition as was shown in §2.22 to limit *VP Deletion*. This follows immediately from the graceful glide into ungrammaticality which the following sentences exhibit.

- (2.103) a. That Fimley successfully deceived the IRS seems to please him, but I would hate to try to do it/so.
 b. For Fimley to successfully deceive the IRS seems to please him, but I would hate to try to do it/so.
 c. ?How long Fimley successfully deceived the IRS seems to please him, but I would hate to try to do it/so.⁵⁷
 d. Fimley having successfully deceived the IRS seems to please him, but I would hate to try to do it/so.

⁵⁶ Note, incidentally, that the argument of §2.22 is unchanged by the fact that there are many environments in which using an action nominal or a derived nominal produces such salad as one finds in (i) and (ii).

(i) *His inspecting of the latrines was thorough, but I just can't ____.

(ii) *The uprising followed his inspection of the latrines when his officers were unable to ____.

These ungrammaticalities are simply due to other limiting conditions on *VP Deletion*, which preclude nouny controllers even more severely than is the case for the comparative constructions of (104).

Nor would the argument be affected by data from speakers who reject totally such sentences as (2.101f, g) and (2.101f', g'), (and possibly other sentences of (2.101) and (2.101') as well), nor by data from speakers who find all sentences good. The claim is only that the following inequalities should hold:

(iii) (2.101f) \geq (2.101g)
 (iv) (2.101f') \geq (2.101g').

No claim is made with respect to whether the sentences of (2.101) should be better or worse than those of (2.101').
⁵⁷ The sentences in (2.103c) are more awkward than expected, but this seems not to be attributable to the use of *do it* or *do so*, because the sentence is not improved if *deceive the IRS* appears in their place.

- e. Fimley's having successfully deceived the IRS seems to please him, but I would hate to try to do it/so.
- f. ? Fimley's successful deceiving of the IRS seems to please him, but I would hate to try to do it/so.
- g. ?? Fimley's successful deception of the IRS seems to please him, but I would hate to try to do it/so.

The parallels between (2.101), (2.101'), and (2.103) are strong, and it will probably be possible sometime to state a generalization covering the interaction of all types of anaphoric linkage and nouniness. But since my concern here is merely to demonstrate a number of processes in which accessibility is a function of nouniness, I have not undertaken this broader task.

2.24. The Sentential Subject Constraint

In Ross (1967), on the basis of such contrasts as that between (2.104) and (2.105), I proposed the constraint roughly stated in (2.106).

- (2.104) a. They figure that the bomb damaged the hoods of these cars.
 - a'. Of which cars do they figure that the bomb damaged the hoods?
 - b. They figure that [the hoods of these cars] were damaged by the bomb.
 - c. Of which cars do they figure that the hoods were damaged by the bomb?
- (2.105) a. They think that the drivers resented having to send money to these hoodlums.
 - a'. To which hoodlums do they think that the drivers resented having to send money?
 - b. They think that [having to send money to these hoodlums] was resented by the drivers.
 - b'. *To which hoodlums do they think that having to send money was resented by the drivers?
- (2.106) No elements can be chopped out of a clause which is the subject of a sentence.

Note that it would be incorrect to say that no part of a subject can be chopped, for in converting (2.104b) to (2.104b'), we see that the prepositional phrase *of which cars* can emerge from the bracketed subject phrase. But when the subject is clausal, as it is in (2.105b), no part of this bracketed subject may be chopped: (2.105b') is bad.

In fact, however, (2.106) must be squishified, as in (2.107).

(2.107) *The Sentential Subject Constraint*

If a part of a subject is chopped out of it by any rule, the grammaticality of the result will vary directly with the nouniness of the subject.

That is, what I did not realize in Ross (1967) is that there are intermediate stages between the fully grammatical (2.104b') and the fully ungrammatical (2.105b'). They are shown in (2.108b), (2.109b), and (2.110b).

- (2.108) a. They think that [the collection of these kinds of facts] was premature.
 - b. ? Of which kinds of facts do they think that the collection was premature?
- (2.109) a. They think that [the collecting of these kinds of facts] was superfluous.
 - b. ?? Of which kinds of facts do they think that the collecting was superfluous?

- (2.110) a. They think that [Ted's collecting of these kinds of facts] was amateurish.
 - b. ? *Of which kinds of facts do they think that Ted's collecting was amateurish?

My judgments on sentences like (2.109b) are not as sharp as are those on such sentences as (2.108b) and (2.110b), of which the former is clearly preferable to the latter, with the latter being slightly better than (2.105b'). I believe there to be a slight preference for chopping out of action nominals without subjects, like (2.109a), over action nominals with subjects, like (2.110a). If so, this difference would parallel the facts about pied piping noted in (2.90)–(2.92) above.

2.25. Summary

This concludes my presentation of the evidence for the existence of a squish of nouniness which orders various types of complements as shown in (1.2). Above, for the purposes of exposition, I have broken down this evidence into three groups: external behavior of the complements (§§2.1–2.5), internal limitations (§§2.6–2.17), and accessibility phenomena (§§2.18–2.24). Of course, the data in each of these subsections should be taken as a column in the large matrix which represents the nouniness squish. I have given this squish in (2.111), rearranging these columns to yield the maximally well-behaved matrix. The parenthesized numbers at the top of each column are the numbers of the examples in the text which contain the information on which the column is based, and the bracketed numbers under each column refer to the appropriate subsections of §§2.⁵⁸

For typographical reasons, I have split up the nouniness squish into two parts, which should be thought of as being joined together. 2.111a, shows "sentence-based" phenomena, 2.111b, "noun-based" phenomena.

I have called the syntactic processes that head the columns in (2.111a) *sentence-based* for the reason that they all work in the most sentential (= least nouny) of the complements—tensed *that*-clauses. The constructions toward the left of (2.111a) are extremely "choosy," applying only with complements of extremely high sententiality. But as we proceed rightwards in (2.111a), the processes become less choosy, and are willing to work not only with highly sentential complements, but even with complements that have little in their outward form that suggests a sentential nature.

By contrast, the processes in (2.111b) I refer to as *noun-based*: all, except *Promotion*, which can be seen to be something of a maverick anyway, work with pure nouns, with the less choosy processes (this time, they are on the left of the matrix) working even with things that have superficial features that are incompatible with pure nouns—features like aspect.

Mentally placing (2.111a) and (2.111b) together, the former on the left, and the latter on the right, we find the *sentence-choosy* processes on the left, and the *noun-choosy* ones on the right, with the less discriminating ones in the middle.

To give some examples of what I mean by choosiness, we can see that *Extraposition*, in column (ix), is choosier than *VP Deletion*, in column (xxi)—fewer types of complements can extrapose than can serve as controllers for *VP Deletion*. And *tabs*, in column (viii), is a choosier idiom chunk than is *headway*, in column (xix)—the former won't be the subject of *Poss Ing* complements, while the latter will.

⁵⁸ In some cases, as with such complex data as those presented in (2.73)–(2.75) above, I have entered an average value in a particular cell of (2.111), for otherwise the data could not be presented in matrix form.

Note also that since (2.111) conflates the distinction made in (2.70) between those *ing*-complements whose main verb is an auxiliary and those whose main verb is a true verb, (2.111) will present a less detailed picture of the interaction of determiners and nouniness than (2.70) in this respect too.

(2.111)

The Nouniness Squish⁵⁹

a. Sentence-based phenomena

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)	(xvi)	(xvii)	(xviii)	(xix)	(xx)	(xxi)	(xxii)	(xxiii)
<i>that S</i>	?	OK	OK	OK	OBL	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
<i>for to</i>	?*	?	?	OK	OBL	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Q	??	?	?	?	OPT	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
<i>Acc Ing</i>	*	?*	?*	*	DNA	??	??	?	?	?	?	?	?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
<i>Poss Ing</i>	**	*	?*	*	DNA	?*	*	*	??	??	??	?	?	?	?	?	?	?	?	OK	OK	OK	OK
Act. Nom.	OK	OK	OK	*	DNA	*	*	*	??	??	??	?	?	?	?	?	?	?	?	OK	OK	OK	OK
Der. Nom.	OK	OK	OK	*	DNA	*	*	*	??	??	??	?	?	?	?	?	?	?	?	OK	OK	OK	OK

DNA - does not apply OPT - optional OBL - obligatory

⊠ the cell in question cannot be checked for grammaticality⁶⁰

Also, the restriction specifying what types of complement can be possessivized (cf. column (xxiii)) is choosier than the one specifying what types can undergo *NP Shift* (cf. column (xxv))—what can be possessivized can be *NP-shifted*, but not conversely. And *good/bad* are choosier determiners than are the demonstratives *this* and *that*.

⁵⁹ The notational device of enclosing horizontally ill-behaved cells in parallel vertical lines, and vertically ill-behaved cells in horizontal lines, is the same as in (2.39) above. This matrix seems remarkably well-behaved, vertically, and highly well-behaved horizontally too.

⁶⁰ Thus the lower left-hand corner of (2.111a) contains ⊠, because AP subjects only occur in pseudo-cleft sentences, and there is no nominalization of *be* which could be used to check whether AP subjects are possible in derived nominals. Nor is there an action nominal of this stative predicate, which accounts for various occurrences of ⊠ in the sixth line of (2.111a).

⁶¹ For simplicity, I have chosen to ignore the difference between (2.54b) and the vertically ill-behaved (2.55b) and have conflated these two sets of data into one column in (2.111a).

⁶² Cf. note 46 above for discussion of the ill-behavior of this cell.

⁶³ Examples of this cell, which were not given in (2.20) above, are as follows: while *there* can be the subject of verbal forms of *exist* (cf. (i)), it cannot be the subject of the nominalization *existence*. Cf. *(ii).

(i) There exist counterexamples.

(ii) *There's existence of counterexamples render shaky your argument.

Similarly, though non-sentential *it* can be a subject of derived nominals (cf. (iii)), the expletive *it* of *Extraposition* cannot be. Cf. *(iv).

(iii) Its weight makes me sick.

(iv) *Its possibility that I may be wrong makes me sick.

⁶⁴ As an example of this cell, which was omitted in (2.19) above, consider the fact that there is no derived nominal form of (i): *(ii) is bad.

(i) That it is muggy outside means that we shan't wish to prolong our stroll, Fawnsforth.

(ii) *Its mugginess outside means that we shan't wish to prolong our stroll, Fawnsforth.

b. Noun-based phenomena

(2.111)

	(2.5)	(2.59)	(2.71)	(2.66)-(2.68), (2.72)	(2.44)	(2.44)	(2.73)	(2.74)	(2.13)	(2.24)	(2.75)	(2.77)	(2.76)	(2.89) + (2.108)-(2.110)
<i>that S</i>	*	*	*	*	DNA	DNA	*	*	*	**	*	*	*	*
<i>for to</i>	?*	*	*	*	DNA	DNA	*	*	*	**	*	*	*	*
Q	?	?*	*	*	DNA	DNA	*	*	*	*	*	*	*	*
<i>Acc Ing</i>	?	?*	⊠	OK?	DNA	DNA	??	?*	?*	*	*	*	*	*
<i>Poss Ing</i>	OK	?*	OK	OK?	IOKI	?*	??	?*	?*	?*	*	*	*	*
Act. Nom.	OK	OK	OK	OK	??	?*	OK	OK	?	??	IOKI	??	?*	?*
Der. Nom.	OK	OK	OK	OK	??*	OK	OK	OK	OK	OK	OK	?*	OK	?
N	OK	OK	OK	OK	DNA	DNA	OK	OK	OK	OK	OK	OK	OK	OK

3. THEORETICAL IMPLICATIONS

3.1 Squishy categories

When one asks the question as to what kind of formal theory could be developed that would approach adequacy in describing such a complex array of facts as those summarized in (2.111), the answer that would first suggest itself to me is that what is needed here is not a new type of rules that will operate upon two types of constituents (or perhaps some larger number, as suggested in Williams (1971)) in such a way as to project some underlyingly discrete system into the superficially fuzzy, smeary, quasi-continuous matrix we find ourselves confronted with, but that possibly a more radical departure from the previous transformational literature may be called for. I cannot of course demonstrate logically that the continuous system I will propose below must be correct, and that no discrete system can be made to work. I doubt, however, that a discrete system capable of accounting for such arrays as (2.111) would be seen as a minor adjustment to, or logical extension of, the kind of descriptive apparatus now currently in use in transformational grammar.

With this preamble, let me propose that what is necessary is a relaxation of the claim that sequences of elements either are or are not members of some constituent class, like NP, V, S, etc. Rather, I suggest, we must allow *membership to a degree*. Thus in particular, I propose that the previously used node S, sentence, be replaced by a feature [α S], where α ranges over the real numbers in [0, 1].⁶⁵ Each of the complement types in (1.2) would be given a basic value

⁶⁵ It seems too obvious to me to need much discussion that at present, I am in no position to answer any questions such as whether the real numbers are necessary or whether we can get by with the rational numbers, or with some kind of topological partial ordering that I am not mathematician enough to know how to talk about. I use the real numbers merely for purposes of illustration.

of α , and rules, filters, and other types of semantactic processes, would be given upper and lower threshold values of α between which they operate (cf. §3.3 below).

Let us first try to specify what the central values for the elements of (1.2) should be. If we set the extremes as in (3.1), what values can we assign to the intermediate elements?

- (3.1) *that S* [1.0 S]
for to
 Q
Acc Ing
Poss Ing
 Act. Nom.
 Der. Nom.
 N. [0.0 S]

Can we assume that, since there are seven elements to cover the interval from 0.0 to 1.0, each element is equally far away from its neighbors, i.e., are the elements about 0.1428... units apart? Or must we instead recognize some kind of "bunching," with some elements of (3.1) being close to one neighbor and farther away from the other one?

I suspect that the latter situation obtains, though I am not at present able to specify exactly what the bunching function is. An indication that such a function may exist is given by the dots in (2.111).

I have placed a dot on every line between two cells in (2.111) where the upper cell differs from the one below in its indication of grammaticality.⁶⁶ Thus in column (i), there is a dot between the highest and the next highest cells, because the former contains "?" and the latter "?*". However, there is no dot between the top two cells of column (iv), for instance, because each contains 'OK': dots appear only between any two cells which differ in grammaticality.⁶⁷ If we then count up the dots on each line, we have an index of the difference between the types of complements immediately above and immediately below the line in question.⁶⁸

The sums of dots for each line are given to the right of (2.111b). If the number of dots per line is a fair first approximation to the desired bunching function, then, since there are dots in all, and since

$$\frac{1.00}{87} \cong 0.0115$$

we could multiply the number of dots per line by 0.0115 and arrive by simple arithmetic at the bunching function in (3.2).

- (3.2) *that S* - [1.0 S]
for to - [(1.0-4 × 0.0115) S] = [0.954 S] \cong [0.95 S]
 Q - [(1.0-12 × 0.0115) S] = [0.862 S] \cong [0.86 S]
Acc Ing - [(1.0-30 × 0.0115) S] = [0.655 S] \cong [0.66 S]
Poss Ing - [(1.0-50 × 0.0115) S] = [0.425 S] \cong [0.43 S]
 Act. Nom. - [(1.0-74 × 0.0115) S] = [0.149 S] \cong [0.15 S]
 Der. Nom. - [(1.0-85 × 0.0115) S] = [0.023 S] \cong [0.02 S]
 N - [0.0 S]

⁶⁶ Except that I have not dotted columns (xxviii) and (xxix), in line with a feeling I have that the representation of the facts of *Promotion* in the form of two columns in a matrix is a distortion. Note also the disproportionately high incidence of ill-behaved cells in these two columns.

⁶⁷ Or, in the case of column (v), which differs with respect to the valence (i.e., obligatory, optional, does not apply) of the rule in question.

⁶⁸ Incidentally, the reason that (2.111a) is one row less high than (2-111b) is that adding a row for N to (2-111a) would produce almost exclusively cells marked '☒' and would yield no dots.

A further refinement would be to investigate the "grammaticality distance" between vertically contiguous cells. That is, if we assume that the six grammaticality prefixes which fill the cells of (2.111)⁶⁹, which are presented in (3.3),

- (3.3) OK/?/??/?*/**

divide a continuum from flawless grammaticality to splendid ungrammaticality into six equal "steps" of grammaticality loss, then we might decide to weight the dot on line 1 in column (i) less heavily than the dot on line 3 in column (iv), since the first marks a two-step loss, while the second marks a three-step loss.

I have not undertaken the conversion of dots to steps in detail, but my impression is that a revision of (3.2) in terms of steps would yield a bunching function with even more clustering at the extremes, and even greater spreading in the middle, especially around line 4.

3.2. Dialect and idiolect

But by now, many readers may have asked themselves the question "How firm are the data in (2.111)? Can they support such arithmetical manipulation, or isn't this all just symbol-mongering?"

As is so often the case, the readers are right on target with these questions. I have asked many speakers of English many of the questions I have asked myself in order to try to find out which of the 6²⁷³ possible assignments of the 6 values in (3.3) to a matrix with the 273 cells of (2.111) is "the" correct one. I have not, however, constructed questionnaires, nor collected tapes of actual speech, to try to get "hard" data about the extent to which (2.111) is in accord with the intuitions of the rest of the English-speaking community.

Why not?

The answer is a complex one. First of all, the questioning that I have done, which, while not conducted formally, has been quite extensive, leads me to expect that while some judgments at the extremes may be relatively invariant among speakers, those in the middle are so mixed as to fingerprint each individual speaker of a language differently. When questions of any subtlety are tested against speakers' intuitions, my experience has been that no two speakers will answer a set of even ten questions in the same way.

If this is true, then what is a dialect? How do we know when two speakers speak the same dialect, if no two English-speakers will output the same variant of (2.111)? The usual answer, within transformational grammar, at least, has been (3.4):

- (3.4) To speak the same dialect (or language) as someone else is to have the same intuitions about some set of sentences as (s)he has.

My contention is that under this reconstruction of the notion "dialect," there are no dialects. No one, in particular, would agree with anyone else on a variant of a matrix like (2.111).

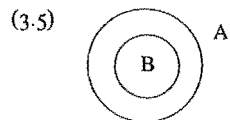
However, it is a fact, as clear as any linguistic fact I know, that there are dialects, and that speakers have intuitions about when they speak the same dialect as some other speaker. Therefore, we must abandon (3.4), and replace it with something a good deal more abstract.

Just what a viable reconstruction of the notion "dialect" might be, however, is a thorny question—one that I have not had any success in resolving. While extended speculation, given my present inability to offer any characterization that does not collapse quickly, would be fruitless, it is worthwhile to point out the defects of one theory that might seem a strong candidate.

Under this theory, a dialect would still be equated with a set of sentences, but speakers would be rated as being "generous" or "stingy," to varying degrees. The most generous

⁶⁹ Again, except for column (v).

speakers would accept all the sentences, and each degree of stinginess would shrink the set, where if speaker A is [α Stingy], and speaker B [β Stingy], $\alpha, \beta \in [0, 1]$, and $\alpha < \beta$, then any sentence B accepts, A will accept. That is, diagrammatically, if B is stingier than A, B's set of sentences is a subset of A's, as in (3.5).



The crucial flaw in this theory is that speakers may be stingy in one respect, and generous in others. That is, one speaker may accept many different kinds of passives, but may accept sentences with backward pronominalization only under very stringent conditions. And another may exhibit the reverse of this mix. I have looked for implicational relationships among various areas of stinginess or generosity, but so far, I have found none. It would appear to be the case that each speaker has a generosity profile, as in (3.6).

(3.6)

	<i>Speaker A</i>	<i>Speaker B</i>
Passives:	[α_1 Stingy]	[β_1 Stingy]
Particle Movement over heavy NPs:	[α_2 Stingy]	[β_2 Stingy]
Sloppiness:	[α_3 Stingy]	[β_3 Stingy]
Backwards Pronominalization:	[α_4 Stingy]	[β_4 Stingy]
Gapping:	[α_5 Stingy]	[β_5 Stingy]

and that the elusive notion of dialect does not emerge as a simple function of the profiles ($\alpha_1, \alpha_2, \alpha_3 \dots \alpha_n$), ($\beta_1, \beta_2, \beta_3 \dots \beta_n$), ...

The next question is, "If there is no viable notion of dialect, then what are linguists to study while they wait for one to emerge?"

The answer that I would like to propose is that they should study idiolects, in as detailed a way as possible. That is, they should try to delve as deeply as possible into the structure of each speaker's intuitions. For instance, the matrix in (2.111), though ill-behaved in a number of ways, clearly bears a strong resemblance to the ideal of a squish. And even though the corresponding matrices for other speakers might differ from (2.111) in having a smaller number of columns (fairly likely), a smaller number of rows (less likely), the columns in a different order (still less likely), or the rows in a different order (least likely), we could still make the claim:

(3.7) Every speaker has some squish of nouniness.

Maybe there are speakers whose data are incompatible with (3.7)—discrete speakers. These would, in (2.111a), have only OKs above line 3, say, and only *s below.

And there may be speakers whose data are unsquishable in an even more radical way, speakers with data in such a checkerboard arrangement as that shown in (3.8):

(3.8)

	Rule 1	Rule 2	Rule 3	Rule 4
That S	OK	*	OK	*
Q	*	OK	*	OK
Acc Ing	OK	*	OK	*
Der. Nom.	*	OK	*	OK

At present, the questioning of other speakers that I have carried out has uncovered neither checkerboard speakers nor discrete ones, in the area of nouniness. I would hope that a claim at least as strong as (3.7) could be maintained, but at present, such a claim would be premature.

The point is, however, that such a squishoid as (2.111) is a *possible system*, because, barring the possibility of deception, either conscious or subconscious, at least one speaker has such a system. And it is a system with enough articulation, enough "texture," as it were, to be worthy of study in its own right, even if very few of its properties are shared by whatever turns out to correspond to it in the system of the dialect of English that I speak, when a workable definition of dialect becomes available.

An analogy to psychology may prove fruitful here. In psychology, the establishment of general laws, which hold across a wide number of subjects, such as George Miller's celebrated Magic Number 7 ± 2 (cf. Miller 1956), is an important goal of research. But no less important is the detailed study of a particular subject, such as the prodigious mnemonist reported on by Luria (1969). Both types of study can tell us about the structure of mind, and the organization of memory, in this particular case.

In transformational grammar, we have tended to concentrate on the former type of study, to the exclusion of the latter type. What I have been trying to suggest, in this section, is that it is time to right the balance, especially in view of the difficulties, at present unresolvable, as far as I know, in finding a viable characterization of the notion of dialect.⁷⁰

3.3. Ranges of applicability

Let us now turn our attention to another area which is suggested by the structure of (2.111)—the issue of threshold values for syntactic processes. Assuming that we have found some satisfactory values of α to assign to the elements of (1.2), what can we say of the *range of applicability* of any rule? The first claim, itself quite strong, is that all rules must be specified for *continuous segments of the interval [0,1]*. That is, we would like to be able to maintain the formal claim stated in (3.9).

(3.9) Any rule involving nouniness is assigned two threshold values, L(lower bound) and U (upper bound), such that

$$0 \leq L < U \leq 1$$

- where R will not operate on a complement of nouniness α if (a) or (b) (below) holds, but will operate on any α such that (c) holds.
- b. $0 \leq \alpha < L$
 - c. $U < \alpha \leq 1$
 - d. $L \leq \alpha \leq U$

Assuming for the moment that (3.9) is essentially correct, can we go beyond it to maintain (3.10)?

(3.10) For any rule conforming to (3.9), either $L=0$ or $U=1$, or both.

In other words, must the range of applicability of every rule contain at least one extreme?

The only counterexample to (3.10) in (2.111) is our old friend *Promotion*. I know of two other possible counterexamples, however: *Tough-Movement*⁷¹ and *Raising*.

⁷⁰ For some further discussion of the issues touched upon in this section, cf. Ross (1973), §3, and the references cited there; also Elliott, Legum, and Thompson (1969).

⁷¹ Or any cognate rule of deletion, for either alternative would be equally damaging to (3.10).

The first rule, which converts (3.11a) to (3.11b),

- (3.11) a. It is tough to imagine a spotless ocelot.
b. A spotless ocelot is tough to imagine.

is clearly sentence-based: the conversion of (3.12a) to (3.12b) becomes more difficult as the complement in (3.12a) gets nounier.⁷²

- (3.12) a. It is tough $\left\{ \begin{array}{l} \text{for me to imagine gravel pizza} \\ \text{for me to imagine } \left\{ \begin{array}{l} \text{him} \\ \text{his} \end{array} \right\} \text{ liking gravel pizza} \\ \text{for me to imagine Bill's } \left\{ \begin{array}{l} \text{ingesting} \\ \text{ingestion} \end{array} \right\} \text{ of gravel pizza} \end{array} \right\}$
- b. Gravel pizza is tough $\left\{ \begin{array}{l} \text{for me to imagine} \\ \text{for me to imagine } \left\{ \begin{array}{l} \text{him} \\ \text{his} \end{array} \right\} \text{ liking} \\ \text{*for me to imagine Bill's } \left\{ \begin{array}{l} \text{ingesting} \\ \text{ingestion} \end{array} \right\} \text{ of} \end{array} \right\}$

However, as has often been remarked, *Tough Movement* will not operate out of *that*-clauses—cf. *(3.13b).

- (3.13) a. It is tough for me to prove that she thought of gravel pizza.
b. *Gravel pizza is tough for me to prove that she thought of.

The rule of *Raising*, which is discussed extensively in Postal (1974), removes the subjects of infinitival and gerundive complements and makes them constituents of the matrix clause. Thus (3.14a) and (3.15a) become (3.14b) and (3.15b), respectively.

- (3.14) a. For Biff to whiff is likely.
b. Biff is likely to whiff.
- (3.15) a. Jed's being hassled by Ernie continued.
b. Jed continued being hassled by Ernie.

The rule does not work for derived nominals—cf. *(3.16b).⁷³

- (3.16) a. The city's destruction by the invaders continued.
b. *The city continued (its) destruction by the invaders.

Nor, apparently, is there any evidence that it works directly upon *that*-clauses—that is, that the correct source for (3.14b) is not (3.14a), as I have assumed, but rather (3.17).

- (3.17) That Biff will whiff is likely.

If evidence could be found to support deriving some sentences which involve *Raising* from remote structures containing *that*-clauses, this rule would cease to be a counterexample to (3.10), which would leave only *Promotion* and *Tough-Movement* to account for. Since I know

⁷² Again, except for *picture*-nouns.

⁷³ Such sentences as (i) are demonstrably produced by *Equi*, not by *Raising*

(i) Jack continued the investigation of Jeffrey.

In passing, there is an intriguing possibility, which I have not investigated in detail, that *Promotion* may be some alloform of *Raising*.

of no way around them at present, however, I mention (3.10) only as an interesting possibility, and cannot advance it as a valid restriction.

I will close these brief remarks on the subject of ranges of applicability by calling attention to one final problem—that of specifying the *rate of decay*.

Compare column (iv) of (2.111), where the judgments go from 'OK' to '*' in the space of two cells; column (x), where the same transition takes three cells; column (ii), where it takes four cells; column (iii), where a slightly longer transition takes five cells; and column (xiii), where the fading of grammaticality is so gradual that absolute ungrammaticality is not even attained in the column.

The implications of such a comparison are, I think, quite clear: instead of the absolute thresholds L and U specified in (3.9), it will be necessary to provide each rule with some *decay function*, noting both the level of nouniness at which decay sets in and also the slope of the function.

Hosts of questions about the formal nature of such functions immediately suggest themselves: Are they linear, or of a higher order? How high? Logarithmic? What kinds of decay functions are to be excluded? What are the connections between the formal operation which a rule carries out (deletion, permutation, etc.) and its decay function? etc., etc.

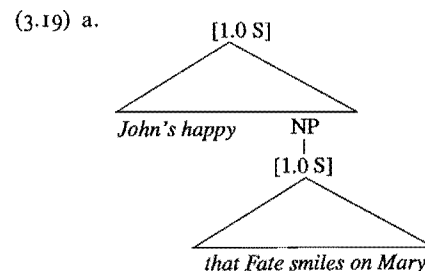
Important though such questions undoubtedly are, at present, the only data we have to bring to bear on them are too insufficient to even attempt answers.

3.4. Squishy command and squishy primacy

An important consequence of the hypothesis that there is a feature of sententiality is that the traditional definition of command,⁷⁴ which is given in (3.18a), must be changed along the lines suggested in (3.18b) below.

- (3.18) a. A *commands* B =_{df.} all the S nodes that dominate A dominate B. If all the S nodes that dominate B also dominate A, A and B are *clause-mates*. But if there is some node S_i which dominates A but not B, then A *asymmetrically commands* B.
- b. A *α-commands* B =_{df.} all the S nodes that dominate A dominate B, and in addition, there is a node K, with the feature [α S], which dominates B but does not dominate A. And if A *α-commands* B, for some fixed α, then B will be said to (1-α)-command A.

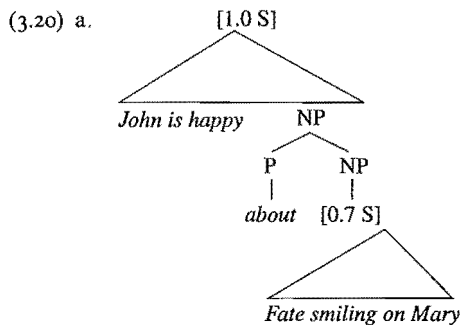
Thus in (3.19a), where *Mary*, is dominated by a *that*-clause, which has the value [1.0 S], and where this clause does not dominate *John*, as is indicated in the diagram, the α-command facts are as stated in (3.19b).



⁷⁴ For discussion cf. Langacker (1969), where this notion is introduced.

- b. *John* (1.0)-commands *Mary*;
Mary (0.0)-commands *John*.

However, in (3.20a), where the *Acc Ing* complement has been assigned, for the purposes of discussion, the value [0.66 S] (as suggested in the first-order approximation to a bunching function that is given in (3.2) above), the α -command facts are as stated in (3.20b).



- b. *John* (0.66)-commands *Mary*;
Mary (0.34)-commands *John*.

It is an important piece of evidence for features like [α S] that there are semantactic phenomena whose description requires, as far as I can see, a predicate like the squishy command of (3.18b). I will discuss three in the sections immediately below.

3.4.1. Pronominalization and topicalization

That pronominalization linkages must be stated on the output of *Topicalization* is apparent from the contrast in (3.21) below.

- (3.21) a. *He_i never realized that Ed_i was under surveillance.⁷⁵
 b. That Ed_i was under surveillance he_i never realized.

As (3.21) shows, forward pronominalization becomes possible out of a topicalized constituent. However, this is not always the case. Thus note that forward pronominalization in (3-22b) is still impossible, despite the fact that the antecedent NP has undergone *Topicalization*.

- (3.22) a. *He_i didn't realize that Mary doted on Ed_i.
 b. *Ed_i he_i didn't realize that Mary doted on.

Why the contrast between (3.21b) and (3.22b)? The correct generalization, which I am grateful to George Lakoff for pointing out to me, would seem to be along the lines of the one stated in (3.23).

- (3.23) If, in an input tree S_k , NP_1 commands⁷⁶ and precedes NP_2 , and if, after *Topicalization* in S_{k+1} , NP_2 precedes NP_1 but the command relationship is unchanged, then NP_2 can be the antecedent for a pronoun at NP_1 .

⁷⁵ Identical subscripts denote presupposed coreference (cf. Postal (1971) for discussion). Thus (3.21a) is only ungrammatical if *he* is taken to be anaphoric to *Ed*.

⁷⁶ For this generalization, and what immediately follows, let us use the unquantified notion of command that is given in (3.18a).

Thus the command relationships between (3.21a) and (3.21b) are unchanged: *he_i* commands *Ed_i* in both trees. However, in (3.22), the command relationships change: in (3.22a), *he_i* commands *Ed_i*, but in (3.22b), the reverse is the case.

What is important for the notion of squishy command is that (3.21b) and (3.22b) are just the endpoints of a gradient of acceptability. Consider the sentences in (3.24).

- (3.24) a. *Ed_i's pony he_i realizes that Mary dotes on.
 b. ?*Your love for Ed_i he_i realizes that Mary never talks about.
 c. ??The photographing of Ed_i he_i didn't resent.
 d. ?Our razzing Ed_i he_i didn't resent.
 e. ?Us razzing Ed_i he_i didn't resent.
 f. Why they didn't invite Ed_i over he_i never learned.
 g. For us to tickle Ed_i with a feather he_i would really love.

Intuitively, it seems quite clear what is going on here. The series (3.22b), (3.24a), (3.24b), ..., (3.24g), (3.21b) could be added to (2.111) as another column, probably between columns (xii) and (xiii). Formally, however, some problems of detail remain before this intuition can be captured in such a way that the desired results emerge.

Informally, we seem to have here a case where the two primacy relations discussed in Langacker (1969), *precedence* and *command*, are working against one another. In a case like (3.22b), the fronted NP, NP_2 , bears both primacy relations—precedence and command—to NP_1 , its old commander. But in (3.21b), it bears only the relationship of precedence, while still remaining commanded. In the intermediate cases, NP_2 comes more and more to bear the relationship of command to NP_1 , as we proceed from (3.24g) to (3.24a).

While I am not sure that the following sketch of a formal model will ultimately be satisfactory, as a first step let me propose that Langacker's two primacy relations are related by subtraction. Thus the definition of primacy given in (2.31) above should be replaced by the squishified definition given in (3.25).

(3.25) Squishy Primacy⁷⁷

In establishing the primacy of one node over another, command is twice⁷⁸ as important as precedence.⁷⁹ Thus if two nodes, A and B, are clause-mates, and A precedes B, then $A \xrightarrow{0.33} B$ [read: 'A has (0.33)-primacy over B']. If B precedes A, then $B \xrightarrow{0.33} A$, or $A \xrightarrow{-0.33} B$.

⁷⁷ Note that the restriction in (2.31) to the effect that A and B must be clause-mates, for precedence to be relevant to primacy, has been dispensed with here.

⁷⁸ "Twice," in (3.25), should of course be taken only as an approximate coefficient, used here for the purposes of illustration only.

⁷⁹ There are several reasons for assuming that the precede-component of primacy has less weight than the command-component. One example of this has to do with the scope of quantifiers. Basically, if in shallow structure there are two quantifiers, Q_1 and Q_2 , such that Q_1 has primacy over Q_2 , then semantically, Q_2 is taken to be within the scope of Q_1 . Thus in (i), *every* has primacy over *two*, by virtue of preceding it, and the preferred reading of (i) is that given in (ii).

(i) Every visitor liked two buildings.

(ii) For each visitor, there were two buildings that he or she liked.

Similarly, in (iii), since *every* (1.0)-commands *two*, the former has primacy over the latter, and (iv) is, accordingly, the preferred reading.

(iii) Every visitor thought that two buildings were attractive.

(iv) For each visitor, there were two buildings that he thought were attractive.

But what if the law linking primacy and semantic scope is violated? That is, supposing we try to hear (i) as having reading (ii'), and to hear (iii) as having reading (iv').

(ii') There were two buildings that every visitor liked.

(iv') There were two buildings that every visitor thought were attractive.

For most speakers, (i) can have reading (ii') more easily than (iii) can have reading (iv'). Thus the precede-component of primacy would appear to have less weight than the command-component. For other examples of a similar sort, cf. Ross (MS a).

If A is a member of a higher clause, and A (1.0)-commands B, then ceteris paribus, $A \xrightarrow{0.67} B$, or $B \xrightarrow{-0.67} A$.

That is, if A precedes and (1.0)-commands B, $A \xrightarrow{(0.33)+(0.67)=1.0} B$.

If, however, B precedes A, but A (1.0)-commands B, then the 0.33 coefficient of primacy that B has over A by virtue of the precede-component (PC) will be subtracted from the 0.67 coefficient that A has over B by virtue of the command-component (CC): thus $A \xrightarrow{(-0.33)+(0.67)=(0.34)} B$.

If the complement node that intervenes between A and B does not have the value [1.0 S], as above, but has rather some lesser value of α , $0 \leq \alpha < 1$, then A will α -command B, and the command-component of primacy will be less than its maximum value, 0.67. Its value will be given by multiplying 0.67 by α .

Symbolically, where $P(A, B)$ is the amount of primacy A has over B, and $PC(A, B)$ is the precede-component of this amount, and $CC(A, B)$ is the command-component of it,

$$P(A, B) = PC(A, B) + CC(A, B),$$

where if A α -commands B, then

$$CC(A, B) = \alpha \times 0.67$$

To give some illustrations of the operation of the equation in (3.25), let us derive the values of the squishy primacy of Ed_i and he_i for (3.21b), (3.24g)–(3.24a), and (3.22b). The computations are given in (3.26), where the values of α are taken from the approximation to the bunching function that was given above in (3.2).

- (3.26) a. In (3.21b), *he* (1.0)-commands *Ed*, so *Ed*, 0-commands *he*.
Thus $P(Ed, he) = (0.33 + (0.00)(0.67)) = 0.33$.
Therefore, $Ed \xrightarrow{0.33} he$.
- b. In (3.24g), *he* (0.95)-commands *Ed*, so *Ed* (0.05)-commands *he*.
Thus $P(Ed, he) = 0.33 + (0.05)(0.67) = 0.36$
Therefore, $Ed \xrightarrow{0.36} he$.
- c. In (3.24f), *he* (0.86)-commands *Ed*, so *Ed* (0.14)-commands *he*.
Thus $P(Ed, he) = 0.33 + (0.14)(0.67) = 0.42$
Therefore, $Ed \xrightarrow{0.42} he$.
- d. In (3.24e), *he* (0.66)-commands *Ed*, so *Ed* (0.34)-commands *he*.
Thus $P(Ed, he) = 0.33 + (0.34)(0.67) = 0.56$
Therefore, $Ed \xrightarrow{0.56} he$.
- e. In (3.24d), *he* (0.43)-commands *Ed*, so *Ed* (0.57)-commands *he*.
Thus $P(Ed, he) = 0.33 + (0.57)(0.67) = 0.71$
Therefore, $Ed \xrightarrow{0.71} he$.
- f. In (3.24c), *he* (0.15)-commands *Ed*, so *Ed* (0.85)-commands *he*.
Thus $P(Ed, he) = 0.33 + (0.85)(0.67) = 0.90$
Therefore, $Ed \xrightarrow{0.90} he$.
- g. In (3.24b), *he* (0.02)-commands *Ed*, so *Ed* (0.98)-commands *he*.
Thus $P(Ed, he) = 0.33 + (0.98)(0.67) = 0.99$
Therefore, $Ed \xrightarrow{0.99} he$.
- h. In (3.24a) and (3.22b), *he* 0-commands *Ed*, so *Ed* (1.0)-commands *he*.
Thus $P(Ed, he) = 0.33 + (1.0)(0.67) = 1.0$
Therefore, $Ed \xrightarrow{1.0} he$.

If we now compare the values of $P(Ed, he)$ computed in (3.26) with the grammaticalities of the sentences in question, we arrive at the correspondence in (3.27).

- (3.27) a. Gram (3.21b) = OK, $P(Ed, he) = 0.33$
b. Gram (3.24g) = OK, $P(Ed, he) = 0.36$
c. Gram (3.24f) = OK, $P(Ed, he) = 0.42$
d. Gram (3.24e) = ?, $P(Ed, he) = 0.56$
e. Gram (3.24d) = ?, $P(Ed, he) = 0.71$
f. Gram (3.24c) = ? ?, $P(Ed, he) = 0.90$
g. Gram (3.24b) = ?*, $P(Ed, he) = 0.99$
h. $\left\{ \begin{array}{l} \text{Gram(3.24a)} \\ \text{gram(3.24b)} \end{array} \right\} = *$, $P(Ed, he) = 1.00$

As we proceed from (3.24f) to (3.24a) or (3.22b), we see a fairly smooth transition from 'OK' to '*' with the exception that the transition has a slow start and an accelerated finish.⁸⁰ This means one of two things: either decay functions in general, and this one in particular, cannot be restricted to being linear functions, or the bunching function of (3.2) is wrong, and when replaced by an improved version, would produce a more linear succession of increments of $P(Ed, he)$ from (3.27d) to (3.27h).

In the absence of more data, it would be fruitless to attempt to make a choice between these alternatives, but it should be clear, I think, that we must replace Lakoff's generalization, (3.23), with something squishy along the lines of (3.28).

- (3.28) If NP_1 precedes NP_2 before *Topicalization* and NP_2 precedes NP_1 after it, then the grammaticality of an output structure in which NP_2 is the antecedent for a pronoun at NP_1 will vary inversely with the degree to which NP_2 has primacy over NP_1 .

While there are many flaws in the above sketch of squishy primacy,⁸¹ it seems likely that some such generalization about the facts I have been discussing as that contained in (3.28) will prove to be necessary. If this is so, squishy command and squishy primacy will also be necessary.

3.4.2. Backwards 'any'

For a second phenomenon whose description suggests the necessity of squishy command, consider the paradigm in (3.29) and (3.30).

- (3.29) a. What I (never) said was that he had brains.
b. What I *(never) said was that he had any brains.
- (3.30) a. That he had brains was what I never said.
b. *That he had any brains was what I never said.

The *(never) of (3.29b) shows that the quantifier *any* is dependent on the presence of a negative trigger like *never*—without *never*, the sentence is out.⁸² And as (3.30a) shows, such pseudo-cleft sentences as those in (3.29a) can generally undergo *Copula Switch*, the rule that interchanges subject and predicate of pseudo-cleft sentences.

⁸⁰ That is, if we view grammaticality as a function of squishy primacy, in the mid range of primacy, fairly large variations have no effect on grammaticality, while for high primacy values, a small increment (from 0.99 to 1.00) causes a one-step loss of grammaticality.

⁸¹ One is the fact that in $Ed \xrightarrow{0.33} Ann$ (i), and $Ed \xrightarrow{0.34} Ann$ in (ii).

(i) Ed watched Ann.

(ii) That Ed watched upset Ann.

Intuitively, however, we feel that *Ed* has more primacy over *Ann* in (i) than in (ii). I have as yet found no way to resolve this difficulty.

⁸² The same is true of a wide range of other so-called "negative polarity items"—items such as *ever*, *at all*, *budget*, *whatsoever*, *a red cent*, etc. I will resolutely gloss over mountainous problems pertaining to the study of this type of negative triggering, for an insightful discussion of many of which cf. Horn (1972).

What then is the matter with (3.30b)? It cannot be that *any* cannot appear before its trigger, for (3.31) is good with *never*.

(3.31) That he had any brains was *(never) claimed.

That whatever rules out (3.30b) cannot be limited to pseudo-cleft sentences can be seen by inspection of the *d*-sentences in (3.32)–(3.34).

- (3.32) a. It will be easy to keep writing descriptions of $\left\{ \begin{array}{l} \text{some} \\ *any \end{array} \right\}$ body down.⁸³
 b. Descriptions of $\left\{ \begin{array}{l} \text{some} \\ *any \end{array} \right\}$ body will be easy to keep writing down.
 c. It will be easy to keep from writing descriptions of $\left\{ \begin{array}{l} \text{some} \\ any \end{array} \right\}$ body down.
 d. Descriptions of $\left\{ \begin{array}{l} \text{some} \\ *any \end{array} \right\}$ body will be easy to keep from writing down.⁸⁴

- (3.33) a. They realized too late that he had $\left\{ \begin{array}{l} \text{some} \\ *any \end{array} \right\}$ brains.
 b. That he had $\left\{ \begin{array}{l} \text{some} \\ *any \end{array} \right\}$ brains, they realized too late.
 c. They never realized that he had $\left\{ \begin{array}{l} \text{some} \\ any \end{array} \right\}$ brains.
 d. That he had $\left\{ \begin{array}{l} \text{some} \\ ?*any \end{array} \right\}$ brains they never realized.

- (3.34) a. I realized too late that he has $\left\{ \begin{array}{l} \text{some} \\ *any \end{array} \right\}$ brains.
 b. That he has $\left\{ \begin{array}{l} \text{some} \\ *any \end{array} \right\}$ brains, I realized it too late.
 c. I never realized that he had $\left\{ \begin{array}{l} \text{some} \\ any \end{array} \right\}$ brains.
 d. That he has $\left\{ \begin{array}{l} \text{some} \\ *any \end{array} \right\}$ brains, I never realized it.

For me, these *d*-sentences with *any* are all—except for (3.33d), which is slightly better—as bad as (3.30b), which almost all speakers reject. However, many speakers I have checked with find the *d*-sentences far superior to (3.30b), though some find some *d*-sentences worse than others, with individual variations that have so far baffled me. The restriction I will state below will thus only be valid for speakers who share my negative feelings about not only (3.30b), but also the *d*-sentences of (3.32)–(3.34).

For me, the restriction is one of command. While the *any* in (3.31) is commanded by its trigger *never*, this is not the case for the triggers in (3.30d) [*never*], in (3.32d) [(*keep*) *from*], in (3.33d) [*never*], and in (3.34d) [*never*]. This is apparent in (3.30b)—both subject and object of *was* are obviously clausal. In (3.32d), we know that *keep from* does not command *any* because of the many arguments (some given in §2 above) that *to*-phrases are highly sentential. To return briefly to one, observe that *Extrapolation* can convert (3.35a) to (3.35b).

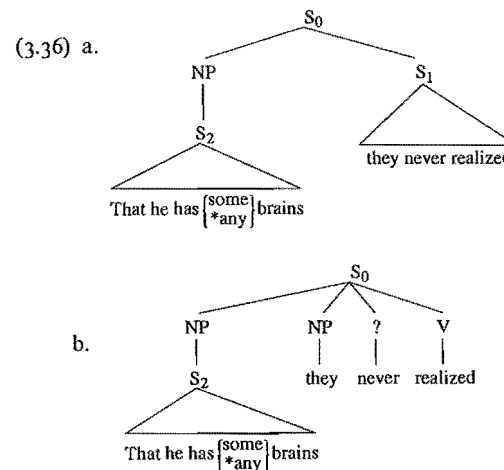
- (3.35) a. To have to pay a 257% sales tax might arouse the public.
 b. It might arouse the public to have to pay a 257% sales tax.

⁸³ This string is good with *anybody*, with the meaning of *just anybody*, but only if *any* is heavily stressed. If *down* is stressed, which is the intonation I intend, the sentence cannot contain *any*.

⁸⁴ The same injunction against stressing *any* as was given in note 83 applies here. For a satisfying star in (3.32d), stress *down*.

But we have seen, in § 2.3 above, that only highly sentential complements extrapose. Hence we know that the *keep from* in (3.32d) does not command its *any*.

As for (3.33d) and (3.34d), which are produced by the rules of *Topicalization* and *Left Dislocation*, respectively, if we make the assumption that the constituents which are fronted by these two rules are Chomsky-adjoined to the sentence, as in (3.36a), and not sister-adjoined, as in (3.36b), then the trigger *never* will not command any elements in the fronted clause.



That (3.36a) is in fact the correct derived constituent structure for both rules is argued for by the fact that parenthetical inserts are generally inserted only into “niches” between the major constituents of the highest clause(s). Thus note that *said Ed* can follow *never* in (3.33c), but not in (3.33d). The preferred niche in (3.33d) and (3.34d) is right after the fronted constituent, which accords well with (3.36a), but would remain unexplained if structures like (3.36b) were postulated.⁸⁵

If we assume such output structures as (3.36a) for *Topicalization* and *Left Dislocation*, the relevant generalization about *any* is stated in (3.37):

- (3.37) Negative polarity items (like *any*) can only precede their triggers if their triggers command them at the end of the first covering cycle.

The necessity of making (3.37) a cycle-final filter rather than an output condition was pointed out by Paul Postal.⁸⁶ He observed that while the structure in (3.38), to which *Raising* has not applied, would meet the condition specified in (3.37),

- (3.38) It seems that [him having any brains]_S is unlikely.

where the trigger is boxed, if the structure underlying (3.38) had undergone the cyclic rule of *Raising*, producing (3.39),

- (3.39) Him having any brains seems [to be unlikely]_S.

⁸⁵ For more discussion of the interesting rule of *Niching*, which effects, the insertion of parentheticals, cf. Ross (MS e).

⁸⁶ In a lecture at the Second Scandinavian Summer School of Linguistics, at Säby Säteri, Sweden, in August 1970.

the condition in (3.37) would no longer be met. This is so because of the fact that *to*-phrases are highly sentential, as is shown by (3.35b).

I note in passing the fact that (3.37) provides support for the theory of global grammar,⁸⁷ which provides for static filters, of which (3.37) is an instance, at at least four levels: semantics, cycle-final, shallow structure,⁸⁸ and surface structure.

The relevance of (3.37) for squishy command can be seen from the sentences in (3.40), which worsen gradually as the degree to which the boxed triggers command the *anys* lessens.

- (3.40) a. That he'll win anything is unlikely.
 b. For him to win anything is unlikely.
 c. How he won anything is unknown.
 d. Him winning anything is unlikely.
 e. ?His winning anything is unlikely.
 f. ?*His repairing of any broken toys would not take long.⁸⁹
 g. ??The discovery of any results of significance is unlikely.
 h. ?*Pictures of anybody were not on the table.⁹⁰
 i. *Anybody does n't resemble Tom.

Thus, we must squishify (3.37). (3.41) is the result.

- (3.41) If a negative trigger α -commands a preceding polarity item at the end of the first covering cycle, the grammaticality of the sentence will vary directly with the value of α .

3.4.3. Predicate crossing

In Lakoff (1969), justification is given for a global rule linking the superficial precede and command relationships of any two quantifiers with their semantic scope (cf. note 79 above). A rough statement of this rule is given in (3.42).

- (3.42) For any two quantifiers, Q_1 and Q_2 , if Q_1 is semantically higher than Q_2 , then in shallow structure, Q_2 can precede Q_1 only if Q_2 does not command Q_1 .

Thus (3.43a) has the (preferred) reading suggested by (3.43b); but (3.43c), the passive of (3.43a), has the reading suggested by (3.43d), in which the semantic dominance of the quantifiers is reversed.

- (3.43) a. Every legislator fondled many waitresses.
 b. For each legislator, there were many waitresses that he fondled.
 c. Many waitresses were fondled by every legislator.
 d. There were many waitresses who every legislator fondled.

However, when (3.44a) is passivized to (3.44b), we find no such scope shift—both sentences are paraphrased by (3.44c), not by (3.44d).

- (3.44) a. Every legislator expects that many waitresses will pad the bill.
 b. That many waitresses will pad the bill is expected by every legislator.
 c. For each legislator, there are many waitresses who he expects will pad the bill.
 d. There are many waitresses who every legislator expects will pad the bill.

⁸⁷ Cf. Lakoff (1970) for discussion of some other global processes.

⁸⁸ In case anybody ever succeeds in locating this elusive level.

⁸⁹ This sentence can be improved, for me, by making the action nominal subjectless:

(i) ??The repairing of any broken toys would not take long.

⁹⁰ In note 47 above, I called attention to the fact that *picture*-nouns behaved differently from other nominalizations in a number of ways. This is one of them.

The difference in the scope of *many* and *every* between (3.43c) and (3.44b), despite the fact that *many* precedes *every* in each case, is correctly predicted by (3.42). However, the sentences in (3.45) show that (3.42), too, must be squishified: a semantically higher reading for *many* becomes increasingly possible as we proceed from (3.45a) to (3.45h). The grammaticality prefixes in this example should be understood as indicating the viability of this reading in the string in question.

- (3.45) a. *That Ann photographed many people angered every guest.
 b. *For Ann to photograph many people angered every guest.
 c. *How Ann photographed many people angered every guest.
 d. ?*Ann photographing many people angered every guest.
 e. *Ann's photographing many people angered every guest.
 f. ??Ann's photographing of many people angered every guest.
 g. ?Ann's photographs of many people angered every guest.⁹¹
 h. Photographs of many people angered every guest.⁹¹

I have no idea why (3.45e) is vertically ill-behaved, but despite this aberrance, it seems clear that squishy command is at work here. The squishification of (3.42) is on view in (3.46).

- (3.46) For any two quantifiers, Q_1 and Q_2 , if Q_1 is semantically higher than Q_2 , then if Q_2 precedes Q_1 in the shallow structure of some sentence, with Q_1 α -commanding Q_2 , the grammaticality of the sentence will vary directly with α .

3.3.4. Summary

To recapitulate, since the generalizations about backwards *any*'s and about predicate crossing, as stated in (3.41) and (3.46) respectively, make crucial use of the notion of squishy command, and since the notion of squishy primacy on which (3.28) depends in turn depends on squishy command, the hypothesis of §3.1, namely, that there exist such squishy categories as $[\alpha S]$, is strongly supported, since without $[\alpha S]$, there could be no such definitions as (3.18b) and (3.25).

3.5. Meta-remarks on nominalization

Although there have been many other analyses of the elements of (1.2), both within transformational grammar and in other theoretical frameworks, I will comment in this paper only on the implications of the non-discrete theory advanced above for the discrete theory proposed in a recent paper by Chomsky (1970), because this paper has had a wide readership, and has given rise to much discussion.

3.5.1. Arguments for lexicalism

Chomsky (op. cit.) develops three arguments for what he calls a lexicalist theory of derived nominals. The previous, transformationalist, theory of the source of such derived nominals as the subject of (3.47a) was that they arose from such paraphrases as the subject of (3.47b) by a transformation called *Nominalization*.

- (3.47) a. John's refusal to go made his teacher impatient.
 b. That John refused to go made his teacher impatient.

⁹¹ For some reason I do not understand, the wide reading of these strings would become impossible, for me, if *photographs* were not plural.

Chomsky compares *Poss Ing* complements with derived nominals, noting three major differences:

(3.48) a. *The Derived Structures Argument (DSA)*

There are *Poss Ing* structures which correspond to sentences that have undergone transformations, but there are no derived nominals which correspond to such derived structures.

b. *The Semantic Kinkiness Argument (SKA)*

While the relationship between *Poss Ing* complements and synonymous NPs containing finite clauses is (generally) fairly regular and one-to-one,⁹² that between derived nominals and synonymous NPs with finite clauses is often much less regular, and is usually one-to-many.

c. *The Internal Structure Argument (ISA)*

While derived nominals have the internal structure of NPs (i. e., they pluralize and take determiners), *Poss Ing* complements do not.

Chomsky cites such facts as those presented in (3.49)–(3.51) [his (6)–(8)] as evidence for the DSA.

(3.49) a. John is easy (difficult) to please.

b. John is certain (likely) to win the prize.

c. John amused (interested) the children with his stories.

(3.50) a. John's being easy (difficult) to please.

b. John's being certain (likely) to win the prize.

c. John's amusing (interesting) the children with his stories.

(3.51) a. *John's easiness (difficulty) to please.

b. *John's certainty (likelihood) to win the prize.

c. *John's amusement (interest) of the children with his stories.

The three sentences of (3.49) have been produced by *Tough Movement*, *Raising*, and *Promotion*, respectively, and Chomsky is correct in noting that while we find that these processes can operate within the source of the *Poss Ing* complements of (3.50), we do not find them operating within the source of the derived nominals in (3.51).

In support of the SKA, Chomsky cites a number of nouns—those listed in (3.52)

(3.52) laughter, marriage, construction, actions, doubt, activities, revolution, belief, conversion, trial, permutation, residence, qualifications, specifications.

—as examples of a much larger list that could be given of forms whose relationship to NPs containing in non-nominalized form the predicates upon which they are morphologically based is extremely complex. Some examples are suggested in (3.53).

(3.53) a. his residence (here): $\left\{ \begin{array}{l} \text{the place at which he resides here} \\ \text{the fact that he resides here} \\ \text{the time at which he resided here} \\ \text{etc.} \end{array} \right\}$

⁹² Usually, *Poss Ing* complements correspond to NPs of the form *the fact that S*. There are contexts where this correspondence fails, as in (i)–(iii) below:

(i) His returning the money to us is unlikely.

(ii) His sewing us up shouldn't take a minute.

(iii) John's bargaining with Archie dragged on.

but they need not concern us here.

b. the permutation of X and Y: $\left\{ \begin{array}{l} \text{the time at which X and Y were permuted.} \\ \text{the result of permuting X and Y} \\ \text{the way that X and Y were permuted} \\ \text{etc.} \end{array} \right\}$

c. their doubt: $\left\{ \begin{array}{l} \text{the fact that they doubt} \\ \text{the extent to which they doubt} \\ \text{etc.} \end{array} \right\}$

In support of the ISA, Chomsky cites such contrasts as those in (3.54).

(3.54) a. the $\left\{ \begin{array}{l} \text{proof of} \\ \text{*proving} \end{array} \right\}$ the theorem

b. John's unmotivated $\left\{ \begin{array}{l} \text{criticism of} \\ \text{*criticizing} \end{array} \right\}$ the book.

To account for these facts, Chomsky advances a new theory of derived nominals: that they do not come from sentences. That is, Chomsky rejects any transformational analysis that would convert a clause to a nominal structure. Rather, he proposes that the base component of the grammar be enriched, in ways that need not concern us here, so that such derived nominals as the subject of (3.47a) would be directly generated in the base. This direct generation, Chomsky alleges, allows him to explain the ungrammaticality of *(3.51), for the rules involved in the formation of (3.49) only apply to sentences, and derived nominals are never sentences. Furthermore, with direct generation, such semantic kinkinesses as are evident in the (partial) paraphrases of (3.53) are no longer an issue. There is no need to look for synonymous NPs containing finite clauses to serve as sources for NPs with such semantically troublesome head nouns as those in (3.52)—in most essential respects, their surface structures are their sources. And finally, it will follow that the determiners, possibilities of pluralization, etc. of derived nominals are those of nouns like *boy*, for both types of nouns are generated in the same phrase structure configurations.

3.5.2. Rejoinders

In this section, I will attempt to show that while Chomsky has performed an important service in stressing the above three arguments, which definitely do pose difficulties for a transformationalist solution to the problem of nominalization, the alternative theory of lexicalism that he proposes does not provide the solution to these difficulties that he imagines it to. I will take up the arguments of (3.48) in order.

3.5.2.1 *The derived structures argument.* Chomsky opens the DSA with the following statement:

(3.55) Consider first the matter of productivity. As noted above, the transformation that gives gerundive nominalizations [= *Poss Ing* complements—JRR] applies quite freely. (Chomsky 1970: 188)

I have presented many kinds of evidence in §2 above showing that the “quite freely” of this quote must be taken rather loosely. And this is true even if we restrict our attention to the internal phenomena of §§2.6–2.15. What is more important, however, is the fact that the many ways in which *Poss Ing* complements diverge from *that*-clauses are not different in *kind* from the way that derived nominals diverge from *Poss Ing* complements (or from *that*-clauses, for that matter) but only in *degree*. Though these divergences in behavior are important to note, Chomsky is incorrect in his belief that they are discrete.

Let us now turn to the method by which Chomsky proposes to deal with the claim of the DSA: that no derived structures nominalize. What about the fact that we find, in apparent correspondence to (3.56a), the passive of (3.56b); and not only the nominalization in (3.57a), but also the one in (3.57b)?

- (3.56) a. The enemy destroyed the city.
 b. The city was destroyed by the enemy.
 (3.57) a. The enemy's destruction of the city.
 b. The city's destruction by the enemy.

Chomsky argues (op. cit.: 202f.) that rather than NPs like (3.57b) being the nominalizations of passives, they are

- (3.58) ... in effect, passives of base-generated derived nominals, by independently motivated transformations. (ibid.: 205)

That is, Chomsky's base rules generate (3.57a). To this, his rule of *Agent-Postposing* will apply, yielding (3.59):

- (3.59) the destruction of the city by the enemy

Finally, another rule of *NP Preposing* will prepose and possessivize the NP *the city* in (3.59), yielding (3.57b).

Chomsky views his rule of *Agent-Postposing* as a generalization of the rule that forms *by*-phrases in passive sentences, like (3.55b). The concept of "independent motivation" is highly obscure in Chomsky's original article: he says of this generalization only the following:

- (3.60) *Agent-postposing* will then apply, as in the passive, giving *the destruction of the city by the enemy*. To provide this result we need only generalize the operation so that its domain may be a noun phrase as well as a sentence, a modification of the theory of transformations that is implicit in the lexicalist hypothesis ... (ibid.: 204)

The problem here lies in the words "need only." Because obviously, by the same token, the operation of *Tough-Movement*, and the operation of *Raising*, and the operation of *Promotion*, "need only" be generalized so that their domains may be NPs as well as sentences, and the ungrammatical phrases in *(3.51) will result.

To put it in a slightly different way, if a lexicalist theory of nominalization is to succeed in explaining the ungrammaticality of *(3.51), it must show why these latter three rules *cannot* be generalized to NPs.

To give another example which makes the same point, under the assumption that a transformational I will call *PP Shift* converts (3.61a) to (3.61b), and that a transformation of *Dative* converts (3.62a) to (3.62b),

- (3.61) a. We talked with Gretchen about hockey.
 b. We talked about hockey with Gretchen.
 (3.62) a. We gave a bull moose to Mark.
 b. We gave Mark a bull moose.

Why is it that the operation of the former rule "need only" be generalized to NPs (cf. (3.63)), while the latter may not be generalized (cf. *(3.64b))?

- (3.63) a. Our talk with Gretchen about hockey
 b. Our talk about hockey with Gretchen

- (3.64) a. Our gift of a bull moose to Mark
 b. *Our gift Mark (of) a bull moose.⁹³

That is, if one "need only" generalize when the facts show this to be necessary, how could there ever be any counterexamples to the DSA?⁹⁴

Although Chomsky does not indicate how he would avoid this problem of circularity in Chomsky (1970), the original paper on lexicalism, in a later paper (Chomsky 1972), he indicates more clearly what he has in mind.

- (3.65) Secondly, the patterns in question must exist independently for noun phrases, quite apart from these nominalizations [i.e., *John's certainty that Bill will leave, John's eagerness to please, the gift of the book to Mary, the belief that John was killed and John's surprise at Bill's antics—JRR*], as we see from such expressions as *the story of Bill's exploits, the message from John to Bill about money, a war of aggression against England, the secretary-general of the UN, his advantage over his rivals, his habit of interrupting, the prospects for peace, prolegomena to any future metaphysics, my candidate for a trip to the moon, a nation of shopkeepers, and many others.* (Chomsky 1972: 91)

That is, apparently, what constitutes, for Chomsky, the "independent motivation" mentioned in the quote in (3.58) is the existence of some derived nominal *which is not visibly derived morphologically from some existing predicate*. Then since there are no verbs like **to story, *to message (to war, of course, does exist—presumably it (and prospect (?)) are in the above list by accident) *to secretary-general, *to advantage, *to habit, etc., etc.*, the processes which apply in such morphologically complex NPs as *certainty, eagerness, gift, etc.* in (3.65) have independent motivation. Thus Chomsky is claiming that any rule which applies within such morphologically simple abstract nouns as those cited in (3.65) will apply also in morphologically motivated nominalizations. That is, the independent motivation for the *Agent Postposing* that converts (3.57a) into (3.59) is the existence of such NPs as those in (3.66).

- (3.66) the story about Hawaii by Major Minor.

If I am correct in interpreting Chomsky in this way, the DSA reduces to a claim that is of far less interest than it might be taken to have—the claim in (3.67):

- (3.67) The rules which apply within NPs whose head noun is morphologically complex will not differ from those that apply within NPs whose head noun is morphologically simple.

To see why this claim is not the answer to the weakness in the transformationalist analysis of nominalizations that Chomsky correctly identified, let me take up one more case in some detail. It concerns the behavior of the adjective *ready*, which occurs in structures exhibiting two types of deletion. The first type, which converts (3.68a) to (3.68b), is called *Equi*,

- (3.68) a. Thom is ready for₁ [for₂ Thom to operate on Sue].⁹⁵
 b. Thom is ready to operate on Sue.

and the second, which converts (3-69a) to (3-69b), is called *Object Deletion*.

⁹³ It is immaterial that such NPs as (i) exist,

(i) our gift to Mark of a bull moose for this could be produced by applying *PP Shift* to (3.164). The crucial difference between *PP Shift* and *Dative* is that the latter deletes a preposition. It is precisely this feature that renders its output unnominalizable.

⁹⁴ I am grateful to George Lakoff for pointing out this weakness in the DSA to me.

⁹⁵ The *for₂* of (3.168a) goes as a consequence of *Equi*, and the *for*, vanishes by the rule of *Preposition Deletion* that was discussed in §2.2 above.

- (3.69) a. Thom is ready for [for Sue to operate on Thom].
b. Thom is ready for Sue to operate on.

When we examine the behavior of the derived nominal *readiness*, we find that *Equi*-ed structures are compatible with it, but not ones that have undergone *Object Deletion* (cf. the contrast in (3.70)).

- (3.70) a. Thom's readiness to operate on Sue
b. *Thom's readiness for Sue to operate on

What reason does the theory of lexicalism provide for (3.70)? This theory can only say that *Equi* is, on the basis of such *Equi*-ed structures as those in (3.71), whose head noun is morphologically simple, "independently motivated for NPs,"

- (3.71) a. Thom's habit of operating on Sue
b. Mike's effort to make 8 No Trump
c. Nan's yen to spin on the sun

while, because there are no NPs like those in *(3.72), which would motivate generalizing *Object Deletion* to NPs, this rule is limited to sentences.

- (3.72) a. *Sue's tibah of Thom's operating on
b. *8 No Trump's troffe for Mike to make
c. *The sun's yen for Nan to spin on

But now the real inadequacy of lexicalism's answer is apparent. For why shouldn't (3.72) be grammatical, instead of (3.71)? Or why not both? And why, though (3.73) shows it is true that *PP Shift* has "independent motivation" in NPs,

- (3.73) a. The message from Aix to Ghent
b. The message from Ghent to Aix

should we not find *(3.74b) which would allow us to conclude that *Dative* is also independently motivated for NPs?

- (3.74) a. the letter of hope to Mary
b. *the letter Mary (of) hope

The problem for all syntacticians is to explain ungrammaticalities like *(3.51), and contrasts like those we have just seen between *Equi* and *Object Deletion*, or between *PP Shift* and *Dative*. I cannot see that the mystery that surrounds these facts under a transformationalist analysis of nominalizations is dispelled at all by lexicalism.⁹⁶ I thus regard the DSA as being without force in choosing between these two theories.

⁹⁶ Though it would go beyond the scope of the present, rather hasty, treatment of the derived-structures problem to explore this in detail, I suspect that the concept of nouniness may prove helpful in clearing up some of these mysteries. Note the contrast between *(i), which shows that *Object Deletion* cannot operate into a highly sentential complement when within an NP; ??(ii), where the rule operates into a slightly less sentential complement, and which is improved in grammaticality; and ?(iii), which is almost perfect, and which has had *Object Deletion* apply into a derived nominal.

- (i) *The stocks are risky—their readiness for us to re-evaluate is obvious.
(ii) ??The stocks are risky—their readiness for our re-evaluating is obvious.
(iii) ?The stocks are risky—their readiness for our re-evaluation is obvious.

What these facts suggest is that there may be processes which require for their operation what we might refer to as an assimilation of nouniness. Another possible candidate for such a process is described in §3.5.3 below.

3.5.2.2 *The semantic kinkiness argument.* It is difficult to see how the SKA could justify choosing a lexicalist analysis of nominalization over a transformationalist one. Note first that there can be no argument based on simplicity. To be sure, the transformationalist will seek to explain such synonymies as those in (3.53) by postulating some rules to convert structures like those to the right of the colons in (3.53) into the derived nominals to the left of the colons. The lexicalist will start each of these classes of structures from different syntactic deep structures, but will have to account for their synonymy by various semantic rules. We clearly have a trading relationship here—while the transformationalist will have to formulate kinky, non-productive syntactic rules, the lexicalist will have to postulate cognates to these rules in his semantics.

There is one comment Chomsky makes in this connection which deserves some discussion.

- (3.75) Consider, for example, such nominals as [the same list appears as (3.52) above—JRR], and so on, with their individual ranges of meaning and varied semantic relations to the base forms. There are a few subregularities that have frequently been noted, but the range of variation and its rather accidental character are typical of lexical structure. (Chomsky 1970: 189)

There is a strong implication here to the effect that syntactic processes are general and exceptionless—that they are not "accidental," while lexical processes have the opposite characteristics. This implication may not have been intended, but if it was, it is hard to ascertain on what basis it could be defended. Transformations seem to be conditioned sometimes by semantic factors,⁹⁷ sometimes by phonological ones,⁹⁸ sometimes by lexical ones,⁹⁹ sometimes by perceptual ones,¹⁰⁰ and sometimes by any number of mixes of the above

⁹⁷ Thus, as Ed Klima pointed out in class lectures at MIT, it is often only possible to passivize an NP in a prepositional phrase that is loosely bound to the verb if there is a presupposition that the NP in question can be affected by the action of the verb. Thus compare (i) and (ii).

- (i) This bed has been $\left\{ \begin{array}{l} \text{slept} \\ \text{fought} \\ \text{?hidden} \\ \text{??eaten} \end{array} \right\}$ in.
(ii) ??This bed has been $\left\{ \begin{array}{l} \text{breathed} \\ \text{thought} \\ \text{dreamt} \end{array} \right\}$ in.

Many similar examples of other semantic-syntactic interdependence could be cited.

⁹⁸ Thus, as Naomi Baron has called to my attention, the more polysyllabic a verb is, the less likely it is to undergo *Dative*. Cf. the sentences in (i)–(iii).

- (i) I brought / ?? transported Ted an oboe.
(ii) I gave / ??donated / *contributed the IRS all my savings.
(iii) I'm going to fry / ?parboil / ??tempura my parents a banana.

⁹⁹ Cf. (i).

- (i) Fred is $\left\{ \begin{array}{l} \text{likely} \\ \text{*probable} \end{array} \right\}$ to have a nice time.

¹⁰⁰ Thus the usual rule which converts (i) to (ii)

- (i) the friend of the girl
(ii) the girl's friend
will not work on (iii),
(iii) the friend of the husband of my daughter
presumably because the "wrong" bracketing of the output, which is shown in parentheses in (iv), is so predominant perceptually over the "right" bracketing, which is shown with square brackets.
(iv) [The daughter of (my husband]'s friend)

factors, or by yet Other Ones.¹⁰¹ Possibly linguists use the term "lexical" to describe those processes whose causal relationships are the least discernible, but in my opinion, all areas of language are shot through with the partial parallels and half-generalities that are the normative grammarian's undoing and the punster's delight.

Although the problems connected with the area of nominalization are complex beyond belief, far more so than can even be hinted at in such a cursory sketch as the present treatment,¹⁰² I would like to make a brief digression at this point to propose a derivational route for nominalizations which has not been suggested before in the literature that I am familiar with, and which shows a lot of promise, in my opinion, as a way of overcoming several of the objections that Chomsky raises to previous transformationalist analyses.

A foreshadowing of the derivation I will argue for is suggested in a footnote by Chomsky himself:

- (3.76) The artificiality [of assigning a range of meanings to a base form, stipulating that with certain semantic features the form must nominalize and with others it cannot—JRR] might be reduced by deriving nominals from underlying nouns with some kind of sentential element included, where the meaning can be expressed in this way: for example, *John's intelligence* from *the fact that John is intelligent* (in *John's intelligence is undeniable*) and from *the extent to which John is intelligent* (in *John's intelligence exceeds his foresight*. (ibid.: note 11))

What I would propose is that Chomsky's suggested source be adopted, but with a slightly different path to nominalized forms than Chomsky envisions. Succinctly, the scheme is that shown in (3.77).

¹⁰¹ Thus why should *as (of) yet*, a negative polarity item, as shown in (i),

(i) They have *(not) found a solution *as (of) yet*.

be the only polarity item, to the best of my knowledge, which can be permuted to precede and asymmetrically command its trigger? Cf. (ii).

(ii) As yet, I know that they feel that you think that they have *(not) found a solution.

Or to take some other examples, in case it should be thought that the facts about *as (of) yet* are just a repetition of such government facts as were given in note 99, why is it that *That Deletion* should be sensitive to the application of a fronting rule in the clause that the *that* introduces? Cf. (iii)–(vi).

(iii) He realizes (that) we should invite nobody who is fluent in Bavarian.

(iv) He realizes *(that) nobody should we invite who is fluent in Bavarian.

(v) He thinks (that) all the combustibles should be placed in the metal cannisters.

(vi) He thinks *(that) in the metal cannisters should be placed all the combustibles.

And—coals to Newcastle—why should there be a connection between the nature of a matrix verb and the subcategorization of an adjective in its complement, just in case *Raising* and *To Be Deletion* have applied? Cf. (vii)–(ix), which were pointed out to me by Paul Postal.

(vii) Tom_i $\left\{ \begin{array}{l} \text{says} \\ \text{finds} \\ \text{knows} \end{array} \right\}$ that it is interesting (to $\left\{ \begin{array}{l} \text{him}_i \\ \text{her}_j \end{array} \right\}$) that there are so few rickshaws in Urbana.

(viii) Tom_i $\left\{ \begin{array}{l} \text{knows} \\ \text{finds} \end{array} \right\}$ it to be interesting (to $\left\{ \begin{array}{l} \text{him}_i \\ \text{her}_j \end{array} \right\}$) that there are so few rickshaws in Urbana.

(ix) Tom_i finds it interesting (*to $\left\{ \begin{array}{l} \text{him}(\text{self})_i \\ \text{her}_j \end{array} \right\}$) that there are so few rickshaws in Urbana.

Note that to call such facts as those in (i)–(ix) above "irregularities," "paradoxes," "mysteries," etc., is not to abandon attempts to deduce them, ultimately, from general laws, but to make a contingent statement about the current state of linguistic knowledge to the effect that no such deductions are now available.

¹⁰² Some more accurate indications of the size of the problem can be gleaned from a study of Lees (1960), the most extensive treatment of nominalization within the literature of transformational grammar that I know of, and from the bibliography there.

- (3.77) a. *Remote structure*: every nominalization starts out as an abstract head noun which is modified by a sentence.¹⁰³
 b. *Nominalization*: the modifying sentence (whose value of the feature [α S] was 1.0 in remote structure) assumes a lesser value, in effect becoming a gerundive or derived nominal modifier of the abstract head noun.
 c. *Beheading*: the head noun is deleted.

That is, I would propose such derivations as those which proceed from the remote structures in (3.78) through the corresponding structures in (3.79) to emerge finally as the derived nominals which are the subjects of (3.80).

- (3.78) a. The fact that Fred is *sallow* (is beyond question).
 b. The extent to which Fred is *sallow* (exceeds Tom's).
 c. The time at which Jim departed (preceded the detonation of the podium).
 d. The $\left\{ \begin{array}{l} \text{manner} \\ \text{way} \end{array} \right\}$ $\left\{ \begin{array}{l} \text{in which} \\ \text{that} \end{array} \right\}$ Fermat solved it (was intricate).
 e. The path along which they marched to L.A. (went through the woods).
 f. The frequency with which he visited us (doubled).
 g. The interval during which he was imprisoned (was interminable).
 h. The question $\left\{ \begin{array}{l} \text{of} \\ \text{as to} \end{array} \right\}$ whether the statement is $\left\{ \begin{array}{l} \text{true} \\ \text{false} \end{array} \right\}$ (is indeterminate).

- (3.79) a. The fact of $\left\{ \begin{array}{l} \text{Fred('s) being sallow} \\ \text{Fred's sallowness} \end{array} \right\}$ (is beyond question).
 b. The extent of Fred's sallowness (exceeds Tom's).
 c. The time of Jim's departure (preceded the detonation of the podium).
 d. *The $\left\{ \begin{array}{l} \text{manner} \\ \text{way} \end{array} \right\}$ of $\left\{ \begin{array}{l} \text{Fermat ('s) solving it} \\ \text{Fermat's solution to it} \end{array} \right\}$ (was intricate).
 e. The path of their march to L.A. (went through the woods).
 f. The frequency of his $\left\{ \begin{array}{l} \text{?? visiting us} \\ \text{visits to us} \end{array} \right\}$ (doubled).
 g. The duration of Fred's imprisonment (was interminable).
 h. The question $\left\{ \begin{array}{l} \text{of} \\ \text{as to} \end{array} \right\}$ the statement's $\left\{ \begin{array}{l} \text{truth} \\ \text{falsity} \end{array} \right\}$ (is indeterminate).

- (3.80) a. $\left\{ \begin{array}{l} \text{Fred('s) being sallow} \\ \text{Fred's sallowness} \end{array} \right\}$ (is beyond question).
 b. Fred's sallowness (exceeds Tom's).
 c. Jim's departure (preceded the detonation of the podium).
 d. Fermat's solution to it (was intricate).
 e. Their march to L.A. (went through the woods).
 f. His visits to us (doubled).
 g. Fred's imprisonment (was interminable).
 h. The statement's $\left\{ \begin{array}{l} \text{truth} \\ \text{*falsity} \end{array} \right\}$ (is indeterminate).

¹⁰³ I would like to be able to maintain the claim that the modifying clause is always a relative clause, but I cannot take the time here to investigate the possibility that this is true even for clauses that modify the noun *fact*. If such clauses do turn out to be arguably de-relativial, I would expect that the shared NP will be a modality NP, the one which has *wh-* attached to it in *whether*-clauses. (Note that in other cases, it is fairly clear that what *wh-* attaches to can be taken to be an NP in remote structure.)

Assuming for the moment that this path of derivation is basically correct, many questions of detail remain to be answered. Some of them are mentioned briefly below.

Question 1. Why is *(3.79d) bad? Apparently, just this type of nominal requires the operation of the rule which, with mixed success, can apply to extract the subject of the nominalized modifiers of (3.79) and substitute it for the determiner of the abstract head noun. Cf. (3.81):

- (3.81) a. *Fred's fact of $\left\{ \begin{array}{l} \text{being sallow} \\ \text{sallowness} \end{array} \right\}$ (is beyond question).
 b. Fred's extent of $\left\{ \begin{array}{l} * \text{being sallow} \\ \text{sallowness} \end{array} \right\}$ $\left\{ \begin{array}{l} * \text{exceeds Tom's} \\ ? \text{is unknown}^{104} \end{array} \right\}$.
 c. Jim's time of $\left\{ \begin{array}{l} \text{departing} \\ \text{departure} \end{array} \right\}$ (preceded the detonation of the podium).
 d. Fermat's $\left\{ \begin{array}{l} \text{manner} \\ \text{way} \end{array} \right\}$ of $\left\{ \begin{array}{l} \text{solving it} \\ * \text{solution to it} \end{array} \right\}$ (was intricate).
 e. ?*Their path of $\left\{ \begin{array}{l} \text{marching} \\ \text{march} \end{array} \right\}$ (went through the woods).
 f. His frequency of $\left\{ \begin{array}{l} \text{visiting us} \\ * \text{visits to us} \end{array} \right\}$ $\left(\left\{ \begin{array}{l} ? \text{doubled} \\ \text{is unknown}^{105} \end{array} \right\} \right)$.
 g. *Fred's duration of imprisonment (was interminable).
 h. **The statement's question $\left\{ \begin{array}{l} \text{of} \\ \text{as to} \end{array} \right\}$ $\left\{ \begin{array}{l} \text{truth} \\ \text{falsity} \end{array} \right\}$ (is indeterminate).

If we agree to call this rule *Possessive Fronting*, there are a number of unsolved problems about its formulation which are posed by the unsightly littering by stars and other blemishes that dot the landscape in (3.81).

Question 2. Why, given the acceptability of the sentences in (3.82) and (3.83), are the sentences of (3.84) unacceptable?

- (3.82) a. The path along which they traveled went through the woods.
 b. The path along which the blimp descended was a parabola.
 (3.83) a. The path of their travels went through the woods.
 b. The path of the blimp's descent was a parabola.
 (3.84) a. *Their travels went through the woods.
 b. *The blimp's descent was a parabola.

Similarly, why can *question* only undergo *Beheading* with *truth*, and not with *falsity* in (3.80h)? In short, what factors, in detail, govern the applicability of the rule of *Beheading*?

Question 3. *Frequency* is itself morphologically complex. Thus *the frequency of X* should presumably be derived from *the extent to which X is frequent*. But this provides the wrong meaning for *frequency* when it is the subject of such verbs as *double*. Then what is the source of *frequency* in this sense?

¹⁰⁴ Note—horreurs!—that this rule must be made sensitive to various kinds of upper context. Apparently, such derived nominals as that of (3.81b) can only exist in contexts which admit of such embedded questions as *how sincere Fred was*.

¹⁰⁵ Remarks similar to those in note 104 are also applicable here.

Question 4. What type of operation can produce *the duration* from *the interval during which*? Is this in fact the correct source for *duration*?

A much more serious question is the following:

Question 5. The proposal of (3.77) is that all derived nominals arise from modified head nouns. But many derived nominals seem to have no such paraphrase. Some examples appear in (3.85).¹⁰⁶

- (3.85) a. Fritz's trial will begin at one a.m. on Sunday.
 b. The revolution in consciousness stemmed from the Court's decision on umbrellas.
 c. The accompaniment of a kazooist is a prerequisite for employment.
 d. John's beliefs are intense.¹⁰⁷

Clearly, until such questions as these have been answered, the theory of nominalizations outlined in (3.77) cannot be considered a complete theory. Nonetheless, it has a number of desirable points, which make it a much more attractive candidate for future exploration than previously proposed transformationalist analyses.

Point 1. Any theory of nominalizations must specify what kinds of nominal groups like the subjects in (3.79) are possible. That is, why are the subjects of (3.79) selectionally well-formed, by and large, while the nominal groups of (3.86) are not?

- (3.86) a. *Fred's $\left\{ \begin{array}{l} \text{manner} \\ \text{way} \end{array} \right\}$ of being sallow
 b. *The extent of $\left\{ \begin{array}{l} \text{Jim's departure} \\ \text{their march to L.A.} \end{array} \right\}$
 c. *The path of $\left\{ \begin{array}{l} \text{Fred's sallowness} \\ \text{Fermat's solution to it} \end{array} \right\}$

¹⁰⁶ Some of Chomsky's examples from (3.52) appear to merely require head nouns which are rarely deleted. Cf. (i)–(ii) below.

(i) (The sound of) Smedley's demented laughter filled the command module.
 [similarly for *cough*, *retching*, *gasp*, etc.]

(ii) $\left\{ \begin{array}{l} \text{Fred and Jan's marriage} \\ \text{Fred and Jan's state of } \left\{ \begin{array}{l} ?? \text{being married} \\ \text{marriage} \end{array} \right\} \end{array} \right\}$ is happy.

[similarly for *inebriation*, *doubt*, *shock*, *disrepair*, etc.]

And for Chomsky's example in (iii), I propose the source shown in (iv).

(iii) John's beliefs are mutually inconsistent. (ibid.: footnote 11)

(iv) The set of John's beliefs is mutually inconsistent.

That *set* is a noun which must be able to be beheaded can be seen from examples of the following kind, which are due to Susumu Kuno.

(v) This policy covers graduate students, which does not include students' wives.

The fact that *include* generally selects subjects that are sets and the fact that there is singular agreement in the appositive clause of (vi), suggest a source like (vi) for (v).

(vi) This policy covers the set of graduate students, which set does not include (the set of (??) students' wives.

As for the derived nominal *belief* in (iv), I would suggest the source shown in (vii), which parallels the other object-deleted nominals shown in (viii).

(vii) what John believes \Rightarrow John's beliefs

John's hopes/desires/needs/fears/plans, etc.

[Cf. also *what remains* \Rightarrow *the remainder*]

¹⁰⁷ This example is taken from Chomsky (op. cit.: footnote 11).

The *Beheading* analysis of (3.77) traces the contract between (3.79) and (3.86) to the well-formedness of the modifying clauses of (3.78), which also must be generated, independently of the problems of nominalization, and to the ill-formedness of the clauses in (3.87).

- (3.87) a. *The $\left\{ \begin{array}{l} \text{manner} \\ \text{way}^{108} \end{array} \right\} \left\{ \begin{array}{l} \text{in which} \\ \text{that} \end{array} \right\}$ Fred is fallow
 b. *The extent to which $\left\{ \begin{array}{l} \text{Jim departed} \\ \text{they marched to L.A.} \end{array} \right\}$
 c. *The path along which $\left\{ \begin{array}{l} \text{Fred was fallow} \\ \text{Fermat solved it} \end{array} \right\}$

Where there are differences, as in (3.88)–(3.91), it appears always to be the case that the less nouny versions is better than the more nouny version.

- (3.88) a. The fact that he visited us
 b. ? The fact of his visit to us
 (3.89) a. The extent to which Fermat solved it
 b. *The extent of Fermat's solution to it
 (3.90) a. The interval during which Fred was fallow
 b. ?The duration of Fred's fallowness
 (3.91) a. The path along which the marble rolled
 b. ??The path of the marble's roll

I am not sure exactly how to explain these deviations, which definitely constitute a problem for the rule of *Nominalization* mentioned in (3.77b). I will leave this problem for future research.

Point 2. The rule of *Beheading* has abundant motivation, independently of the way nominalizations are analysed.¹⁰⁹ Thus note that in the sentences in (3.92), the forms of *I* all derive from the fuller NP *my car*, where *car* is the head noun that is undergoing *Beheading*.

- (3.92) a. I'm parked on Elm Street.¹¹⁰
 b. Some nut hit me in the right rear fender.
 c. I'm idling a little fast.
 d. Can you put me up on the rack for a minute?

¹⁰⁸ Some speakers may accept (3.87a) with *way*, but only if *way* has the reading of *respect* or *regard*, not if it means *manner*, which is the sense on which I have starred it.

¹⁰⁹ It is the subject of an important study by Ann Borkin (1971), where fascinating questions like the following are discussed. Since *Dylan Thomas's poetry* ⇒ *Dylan Thomas*, via *Beheading* (cf. (i)),

- (i) I like to read Dylan Thomas.
 why do we not find (ii)?
 (ii) ?*Dylan Thomas likes to read himself.

Apparently, different rules treat differently NPs which are underlyingly distinct but come to be identical because of *Beheading*. The badness of ?*(ii) shows that *Reflexivization* uses a pretty choosy definition of identity, and the fact that (iii) is so much better than (ii) shows that *Equi* is fairly devil-may-care.

- (iii) Dylan Thomas likes $\left\{ \begin{array}{l} \text{Dylan Thomas} \\ \text{?} \end{array} \right\}$ to be read on talk shows.

Borkin shows conclusively, I think, that it is impossible to maintain the strong position on identity taken by Ross (1967, ch. 3, footnote 19), which is used in Chomsky (1970: footnote 11) as a basis for an argument against the analysis of the quotation in (3.76) above. While it is still too early to be able to say with any confidence what theory of identity will emerge as a viable one, we must, I think, abandon the position that was taken in Ross (1967) to the effect that the only available notion of identity is underlying identity.

¹¹⁰ These sentences are due to Jorge Hankamer.

Also, as Roger Higgins has pointed out to me, (3.93a) must derive from (3.93b) via *beheading* of the head noun *water*.

- (3.93) a. The kettle is boiling.
 b. The water in the kettle is boiling.

And Postal (1974) cites a number of additional cases of this rule, a few of which appear in (3.94).

- (3.94) a. IBM (stock) split 2-for-1.
 b. (The people in) Boston must be nervous about 1976.
 c. (The price of) lettuce dropped to \$1.19.

Therefore, though the phenomenon of *beheading*, which I suspect will prove to be fantastically pervasive in natural languages, must still be the object of much detailed research in the future, it seems clear to me that it exists, and that part of the analysis in (3.77) is a free ride.

Point 3. Where a nominal group is of doubtful acceptability, the *beheaded* version of that group will be of equal (or greater) doubtfulness, *on the reading that the fuller group phrases*. Thus note that just as (3.88b) is weak—to be sure, for reasons I do not understand—so is (3.95), in which the derived nominal *his visit to us* must have a factive interpretation.

- (3.95) ?His visit to us is beyond question.

Very often, however, the *beheaded* version, in the sense of the fuller version, will be significantly worse than this fuller version. Thus compare (3.96a–c) with (3.89b), (3.90b), and (3.91b), respectively.

- (3.96) a. **Fermat's solution to it exceeded Pascal's.
 b. ?*Fred's fallowness was interminable.
 c. *The marble's roll went through the woods.

I do not know the reasons for this slump in grammaticality, but it feels very much like that commented on in connection with (3.88)–(3.91) above.

To return to the SKA of (3.48), which was the reason for contrasting lexicalism and the *Beheading* analysis of (3.77), it seems to me that there is no evidence from semantic kinkiness which would unambiguously support either of these proposals. The problems of distinguishing the good nominal groups of (3.79) from the bad ones of (3.87) are shared by both analyses, and for each of the questions above for the *Beheading* analysis (Questions 1–5), there is a cognate question in lexicalism, though sometimes these cognate questions become questions of semantics. On balance, then, the SKA cannot be used to reject a transformationalist account of nominalization in favor of a lexicalist account.

3.5.2.3 The internal structure argument. Given the discussion in §2.17 above, very little further need be said about this argument. The elements of (1.2) “have the internal structure of NPs” to greater or lesser degrees, not all or none. In particular, such “mixed” examples as (2.62), (2.64), and (2.66), which are nouny by virtue of their determiners, but sentency by virtue of having aspectual elements or having undergone transformations, would seem to pose serious problems for any discrete theory of complements.¹¹¹

¹¹¹ There is one possible approach to such mixed examples which might allow the retention of a discrete analysis. Namely, one might look for arguments for deriving such sentences as (i) from something like (ii), and (iii) from (iv).

- (i) This calling people up at night has to stop.

(continues)

- (3.103) a. his criticizing the book before he read it (because of its failure to go deeply into the matter, etc.)
 b. *his criticism of the book before he read it (because of its failure to go deeply into the matter, etc.)

Chomsky's claim is that (3.103b) is out because "true verb phrase adjuncts such as *before*-clauses and *because*-clauses will not appear as noun complements in base noun phrases" (Chomsky 1970: 193).¹¹³

In fact, however, when we examine other types of adverbs as modifiers of derived nominals, we find that there are a range of intermediate grammaticalities for such constructions. Cf. (3.104).

- (3.104) a. *His criticism of the book, the train having left
 b. *His criticism of the book, since he was hungry
 c. ?*His criticism of the book before he read it¹¹⁴
 d. ?His criticism of the book before reading it
 e. ?His criticism of the book before its publication
 f. His criticism of the book before 1945

And when we examine the results of modifying the other types of complements in (1.2) by adverbs of the sort shown in (3.104), we find the squish shown in (3.105).

(3.105) *The Adverb Squish*

Adverbial Modifier \ Modifiee	Nominative absolute: (his money (being) gone)	unless, since, (al)though	before, after, because, when, if, while	P conj + Ving O: instead of, upon, while, when, in	P + Der. Nom.: during, before, after, upon, since, due to	P + NP
that S	?	OK	OK	OK	OK	OK
for NP to V	?	?	OK	OK	OK	OK
Q	?	?	OK	OK	OK	OK
Acc Ing	??	?	OK	OK	OK	OK
Poss Ing	??	?	OK	OK	OK	OK
Act. Nom.	?*	??	?	?	?	OK
Der. Nom.	*	*	??	?	?	OK
N(weather) ¹¹⁵	*	*	?	X	<u>OK</u>	OK

(3.106)

(3.107)

(3.108)

(3.109)

(3.110)

(3.111)

¹¹³ In a footnote to the sentences in (3.103), Chomsky observes that NPs like *his criticism of the book for its failure...* are grammatical, commenting "Presumably, *for*-phrases of this sort are part of the complements for verbs and nouns." Since Chomsky gives no other criterion for what is a verb-phrase adjunct and what is a noun-phrase adjunct than such ungrammaticalities as (3.103b), his treatment here suffers from circularity.

¹¹⁴ The prefix on this example represents my assessment of its grammaticality. I do not find it as far out as Chomsky does.

¹¹⁵ I have included in (3.105) a row for such superficially underived nouns as *weather, climate, storm, fog*, etc. which can appear with some adverbs—cf. (i).

(i) the weather in March, the storm after supper, the fog after midnight

The judgements on which this matrix is based can be found in (3.106)–(3.111) below, where the numbers at the bottom of each column of (3.105) correspond to the examples which give the grammaticalities in the column in question.

- (3.106) a. ?I realize that Mary's money ??(being) gone, Caesar will have to pay.
 b. ?For Caesar to have to pay, Mary's money ?*(being) gone, is likely.
 c. ?I don't know [where Joe will live, the storm having flattened his house].
 d. ??Him living in a hotel, apartments being hard to find, is a possibility.
 e. ?His living to get up at 6:45, Jennifer sleeping another hour, was a cause of some resentment.
 f. ?*His skillful shelling of the walnuts, the Shellomatic being broken, was a wonder to behold.
 g. *His refusal of help, the memories still being too fresh, is understandable.
 h. *[The fog, the rain having stopped,] drifted in.¹¹⁶
- (3.107) a. I realize that he doesn't like me, since he thinks 2.13%/day is usurious.
 b. ?For him to order lobster, although it's bad for him, would surprise me.
 c. ?Where he's staying, since it's 10:30 already, is a riddle.
 d. ?Him ordering lobster, though none was safe to eat, was daring.
 e. ?His wolfing it down, though I warned him not to, may lead to an ache in his tum-tum.
 f. ??His immediate calling of the doctor, unless you think a bicarb would be better, is imperative.
 g. *His drive to the hospital, though he was in pain, was incredible.
 h. *[A late storm, though it's humid,] would be welcome.
- (3.108) a. That he burned the contract before he read it was improper.
 b. For him to burn the contract before he read it was improper.
 c. How long he kept the ashes after he did it is unknown.
 d. Him being willing to pay Xerox costs when we get back is encouraging.
 e. His having been arrested while he was strolling in the park is frightening.
 f. ?His singing of sea chanteys while he was lighting the pipes was uncalled for.
 g. ??His destruction of the fortune cookie before he read the fortune is to be regretted.¹¹⁷
 h. ?[The storm after you left] was terrifying.
- (3.109) a. That he sat down instead of running is unfortunate.
 b. For him to sit down while the rhino was charging was ill-considered.
 c. How long he was unconscious before coming to hasn't been determined.
 d. Him muttering like that when being sewed up is understandable.
 e. Your not talking about the accident while visiting him was tactful.
 f. ?His lawyer's handling of the civil suit while remaining a member of the Rhin. Lover's Association was masterful.

¹¹⁶ Note that this sentence is fine if the absolute construction is taken to modify the whole sentence, but it is impossible as a modifier of *fog*. The same remarks apply in all cases pertaining to (3.105).

¹¹⁷ This sentence, for me, is far superior to Chomsky's in (3.103b), especially when *criticism* has the reading not of an event, but of something that has been written. I suspect that this difference is a systematic one, but I do not agree with Chomsky (op.cit.: 194) that this shows that some of the sentences underlying the squish in (3.105) are directly generated, while others are only derivatively generated. What it would indicate to me is that (3.105) should be refined, with two rows appearing in place of the derived nominal row of (3.105).

- g. ?His destruction of the fortune cookie before reading the fortune is to be regretted.
 h. ¹¹⁸
- (3.110) a. That she wrote it during Bill's interrogation is a proof of her serenity.
 b. For them to arrest you upon the king's arrival would cause a scandal.
 c. I don't know how they snuck out after the attack.
 d. Ted buying popcorn during Sarah's coronation disturbed the Duchess.
 e. Fred's having written all he knew after his internment opened my eyes.
 f. ?Famoso's accurate rendering of the stirring "O Caterwaulia!" after his inauguration won him the hearts and souls of the Caterwaulians.
 g. ?Dirty Dick's betrayal of his comrades before their examination of the manuscripts touched off a wave of riots in Canterbury.
 h. The weather during the performance was seasonally rotten.
- (3.111) a. That he left after 6 a.m. is too bad.
 b. For him to leave before Ted was predictable.
 c. Why he stayed until breakfast is a mystery.
 d. Sandy getting sick at night was a coincidence.
 e. Arthur's having found a tarantula during the Late Show was a coincidence.
 f. Myla's discovering of a poisoned orange in the morning was a coincidence.
 g. Biff's obvious insanity over the holidays must have had a natural cause.
 h. The weather after 6 p.m. was even rottener.

In this particular squish, it would appear that the feature [α S] is a factor not only vertically, as in other cases discussed above, but also horizontally. While I cannot explain why the first three columns of (3.105) are ordered as they are, it would seem that as we proceed from left to right in the last four columns, the modifiers become progressively less sentential. The generalization here seems to be along the lines of that in (3.112).¹¹⁹

- (3.112) If a complement C, of sententiality α , is modified by an adverbial A, of sententiality β , $\alpha \geq \beta$.

In other words, complements must be at least as sentential as their modifiers.

Why the inequality sign should point the way it does in (3.112), instead of the other way, is of course a mystery, as is the reason for there being any connection whatsoever between the sententialities of complement and modifier, instead of, say, between that of the subject of the complement and that of the object, or between that of the subject and that of the adverbial modifier, or any number of other conceivable linkages.

3.5.4. Summary

To summarize the above observations on lexicalism, it does not appear that this approach to nominalizations provides an explanation for the factual observations which Chomsky uses as a point of departure for this theory, where these observations are accurate. In particular, since the predicate "has the internal structure of an NP" seems to be quantifiable, and not discrete, it is at present unclear how a discrete theory like lexicalism can be modified to give a squishy

¹¹⁸ The cell in (3.105) corresponding to this sentence is (⊗) because the relevant examples, which would be strings such as (i),

(i) **[The fog while being humid] cleared.
 are bad for other reasons.

¹¹⁹ My thinking in this area has been greatly influenced by Edwin Williams.

output. Furthermore, lexicalism seems to provide no explanation for why *Equi* and *PP Shift* do work inside derived nominals, while *Object Deletion* and *Dative* do not. In addition, lexicalism gives the incorrect impression that there is a discrete difference between derived nominals and all other kinds of complements, whereas in fact these differences form an integral part of the overlapping structure of differences which is visible in (2.111). And finally, given the fact that there is nothing to be gained by trying to remove from the syntax all processes that are partially productive, or kinky in other ways, only to deposit these processes in the semantics, there seems to be no reason to prefer a lexicalist treatment of nominalization to a transformationalist one.

4. CONCLUSION

Where do we go from here? And where have we come from? To take up the second of these questions first, and to answer it for myself, the facts I have gathered in §2 all arose from my fascination with offhand remarks of Zellig Harris in classes at the University of Pennsylvania in 1962 to the effect that some nominalized versions of a sentence were more noun-like than others. As the facts which bore out Harris' observation began to come to my attention over the years,¹²⁰ I struggled to incorporate them within the discrete framework of traditional generative grammar, but with dwindling success, as the complexity of the facts and of their interactions increased.

Finally, I came to the conclusion, possibly a wrong-headed one, that any discrete treatment of data like those in §2 above, or those in Ross (1972a) or Ross (1973), would impose a distortion upon these data. I began to think within a non-discrete framework.

To return to the first of the two questions above, my answer is that the great benefit which linguistic theory has derived and continues to derive from the rigor that Chomsky's formal, algorithmic, theory of generative grammar introduced to syntax must somehow be preserved, even if syntax changes to become a calculus of quasi-continuously varying parameters, like the [α S] proposed above.

One of the major strengths of Chomsky's conception of a language as a set of structures, and of a grammar as a recursive device that enumerated this set, was that it became as important to study what the grammar did not generate—the starred structures—as to study what it did generate. To be sure, previous syntacticians would use expressions like "one does not say" or "there are no attested occurrences of expressions like," and so on, but in Chomsky's conception, the focus changed. What we might now call "shooting for the stars" has become so prevalent that I would guess that a sizeable majority of the examples cited in transformational studies are ungrammatical sentences, not grammatical ones.

This star-shooting went hand in hand with a focus upon the *goodness of fit* between theory and data. One was led more directly to compare the stars that the grammar assigned with those that speakers assigned. If the grammar assigned stars to strings which speakers did not star, the grammar *undergenerated*; if the grammar assigned too few stars, it *overgenerated*.

To me, it seems appropriate to re-emphasize now the point that this concern with goodness of fit that characterizes generative grammar is a valuable and hard-won methodological advance, one that must not be lost sight of in the effort to accommodate squishy facts. That is,

¹²⁰ Many of the observations that I have made in this paper have also been made independently by other scholars. One striking example is to be found in Kuno (1972), where a number of processes, overlapping only in part with those in §2, are shown to parallel each other by virtue of the nouniness of the complements involved (cf. Kuno (op. cit.), exs. (1.45)–(1.50)). Another example is Williams (1971), in which a number of the processes that §2 treats non-discretely are analyzed in terms of a discrete framework.

we must not allow ourselves to obscure the fact that some proposed squishy analysis fits the data badly by using fuzziness as a rug to sweep the bad fit under. In a way, I regard the ill-behaved cells in the matrices I have proposed above as one of the most important parts of the theory I have outlined. Vague and half-formed though it is, in its present form, if it is at least exact enough to produce clearly visible cases of bad fits, the concern for overgeneration and undergeneration of analyses has not been lost.

As time goes on, it will hopefully be possible to arrive at better approximations to the bunching function of (3.2), to propose exact constraints on the decay functions discussed in §3.3, to improve the equation for squishy primacy in (3.25), to convert the inequality in (3.112) to a function, and so on. All of these theoretical tightenings will represent moves towards greater rigor; and will doubtlessly generate more and more instances of ill-behavior.¹²¹

What kind of a theory of non-discrete grammar will emerge is at present entirely unclear to me. The nouniness squish is the first case I have encountered of what Quirk calls "a serial relationship"—the kind of structure shown in (4.1a) (cf. Quirk 1965). All the other phenomena I have investigated seemed more or less compatible with the simpler type of structure shown in (4.1b).

(4.1) (a) *Serial relationship*

OK	*	*	*	*	OK	OK	OK	OK
OK	OK	*	*	*	*	OK	OK	OK
OK	OK	OK	*	*	*	OK	OK	OK
OK	OK	OK	OK	*	*	*	*	OK

(b) *Simple squish*

OK	*	*	*	*
OK	OK	*	*	*
OK	OK	OK	*	*
OK	*	OK	OK	*

What I do not know at present is whether other conditioning factors can be found which determine a phenomenon will produce a serial relationship or a simple squish.

I hope that when the outlines of a theory of non-discrete grammar have become clearer than they now are, this theory will prove to be a useful tool in studying such recalcitrant areas as (degrees of) idiomaticity and metaphor, and the types of constructions that Bolinger calls *blends*. Whether this hope will be realized, however, lies in a squishy future.

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¹²¹ In Lakoff (1973), a number of formal proposals are made, with an eye to characterizing more precisely the type of fuzzy calculus that seems to be necessary in semantics and logic.

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REFERENCES

- Bach, E. (1971). 'Questions'. *Linguistic Inquiry* 2(2): 153-6.
- Borkin, A. (1971). 'Coreference and beheaded NPs'. Paper presented at the 46th Annual Meeting of the Linguistic Society of America, St Louis, Missouri.
- Chomsky, N. (1970). 'Remarks on nominalization'. In R. A. Jacobs and P. S. Rosenbaum (eds.), *Readings in English Transformational Grammar*. Waltham, Mass.: Ginn, 184-221.
- (1972). 'Some empirical issues in the theory of transformational grammar'. In P. S. Peters (ed.), *The Goals of Linguistic Theory*. Englewood Cliffs, NJ: Prentice-Hall, 63-131.
- Elliott, D., S. Legum, and S. A. Thompson (1969). 'Syntactic variation as linguistic data'. In R. Binnick, A. Davison, G. Green, J. Morgan et al. (eds.), *Papers from the Fifth Regional Meeting of the Chicago Linguistic Society*, 52-9.
- Emonds, J. E. (1970). 'Root and structure-preserving transformations'. Ph.D. dissertation, Massachusetts Institute of Technology.
- Fraser, J. B. (1970). 'Idioms within a transformational grammar'. *Foundations of Language* 6(1): 22-42.
- Higgins, R. (1973). 'On J. Emonds' analysis of Extraposition'. In J. Kimball (ed.), *Syntax and Semantics*, vol. ii. New York: Seminar Press.
- Horn, L. R. (1972). 'On the semantic properties of logical operators in English'. Ph.D. dissertation, University of California, Los Angeles.
- Keenan, E., and B. Comrie (1972). 'NP accessibility and universal grammar'. Unpublished paper, King's College (Cambridge) Research Centre.
- Kiparsky, P., and C. Kiparsky (1970). 'Fact'. In M. Bierwisch and K.-E. Heidolph, *Progress in Linguistics*. The Hague: Mouton.
- Lakoff, G. (1969). 'On derivational constraints'. In R. Binnick, A. Davison, G. Green, J. Morgan et al. (eds.), *Papers from the Fifth Regional Meeting of the Chicago Linguistic Society*, 117-39.
- (1970). 'Global rules'. *Language* 46: 627-39.

- Lakoff, G. (1973). 'Fuzzy grammar and the performance/competence terminology game'. In C. Corum et al. (eds.), *Papers from the Ninth Regional Meeting of the Chicago Linguistic Society*.
- Langacker, R. (1969). 'Pronominalization and the chain of command'. In D. Reibel and S. Schane (eds.), *Modern Studies in English*. Englewood Cliffs, NJ: Prentice-Hall, 160-86.
- Lasnik, H. (1972). 'Analyses of negation in English'. Ph.D. dissertation, Massachusetts Institute of Technology.
- Lees, R. (1960). *The Grammar of English Nominalizations*. Bloomington, Indiana: Indiana University Research Center in Anthropology, Folklore, and Linguistics.
- Luria, A. R. (1969). *The Mind of a Mnemonist*. New York: Avon Books.
- McCawley, J. D. (1970). 'English as a VSO language'. *Language* 46: 286-99.
- Miller, G. (1956). 'The magical number seven, plus or minus two'. *Psychological Review* 63: 81-97.
- Morgan, J. (1972). 'Verb agreement as a rule of English'. In P. M. Peranteau, J. N. Levi, and G. C. Phares (eds.), *Papers from the Eighth Regional Meeting of the Chicago Linguistic Society*, 278-86.
- Postal, P. M. (1970). 'On coreferential complement subject deletion'. *Linguistic Inquiry* 1(4): 439-500.
- (1971). *Crossover Phenomena: A Study in the Grammar of Coreference*. New York: Holt, Rinehart, & Winston.
- (1974). *On Raising*. Cambridge, Mass.: MIT Press.
- Quirk, R. (1965). 'Descriptive statement and serial relationship'. *Language* 41: 205-17.
- Reps, P. (n.d.). *Zen Flesh, Zen Bones*. Garden City, NY: Anchor Books.
- Rosenbaum, P. S. (1971). *The Grammar of English Predicate Complement Constructions*. Cambridge, Mass.: MIT Press.
- Ross, J. R. (1967). 'Constraints on variables in syntax'. Ph.D. dissertation, Massachusetts Institute of Technology.
- (1969). 'Guess who?' In R. Binnick, A. Davison, G. Green, J. Morgan et al. (eds.), *Papers from the Fifth Regional Meeting of the Chicago Linguistic Society*, 252-86.
- (1972a). 'Endstation Hauptwort: the category squish'. In P. M. Peranteau, J. N. Levi, and G. C. Phares (eds.), *Papers from the Eighth Regional Meeting of the Chicago Linguistic Society*, 316-28.
- (1972b). 'Act'. In D. Davidson and G. Harman (eds.), *Semantics of Natural Languages*. Dordrecht: Reidel, 70-126.
- (1973). 'A fake NP squish'. In C.-J. N. Bailey and R. Shuy (eds.), *New Ways of Analyzing Variation in English*. Washington, DC: Georgetown University Press.
- (MS a). 'Primacy'.
- (MS b). 'Treetops'.
- (MS c). 'Variable strength'.
- (MS d). 'Sloppier and sloppier: a hierarchy of linguistically possible open sentences'.
- (MS e). 'Niching'.
- Wasow, T., and T. Roeper (1971). 'On the subject of gerunds'. Unpublished paper, Massachusetts Institute of Technology.
- Williams, E. (1971). 'Small clauses in English'. Unpublished paper, Massachusetts Institute of Technology.

The Coordination-Subordination Gradient

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Syntactic Features of Coordinators

13.6

In 13.3 we showed how the same semantic linking function could be performed not only by coordinators, but by subordinators and conjuncts:

- He tried hard, *but* he failed.
He tried hard, *although* he failed.
He tried hard, *yet* he failed.

Since all three of these word classes can in a general sense be termed LINKERS, it is important to understand the syntactic basis of the distinctions between them, and at the same time to appreciate that these distinctions are gradient rather than clear-cut.

We shall therefore examine six features which apply to the central coordinators, *and* and *or*. For each feature, we note whether it is applicable not only to *and* and *or*, but also to items which resemble them. At this stage we restrict ourselves mainly to central coordinators as CLAUSE LINKERS.

(a) CLAUSE COORDINATORS ARE RESTRICTED TO CLAUSE-INITIAL POSITION

13.7

And, *or*, and *but* are restricted to initial position in the clause:

- John plays the guitar, *and* his sister plays the piano.
*John plays the guitar; his sister *and* plays the piano.

This is generally true of both coordinators and subordinators, but it is not true of most conjuncts:

- John plays the guitar; his sister, *moreover*, plays the piano.

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