

# On Derived Nominals in English

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## I

Robert Lees (1960) showed that abstract nouns such as *refusal*, *criticism*, *destruction*, etc., are systematically related to the verbs, *refuse*, *criticize*, *destroy*, etc., and proposed the transformational derivation of nominals such as *John's refusal of the offer* from the abstract structures underlying their corresponding sentences such as *John refused the offer*. Lees' arguments in favor of the derivation of derived nominals by a transformational rule of nominalization was generally accepted by Lakoff (1965) and Chomsky (1965).

It was in the paper "Remarks on Nominalization" (1970) that Chomsky presented a new approach in the description of natural language. He deals with the problem of derived nominals in English and argues that they should be generated in the base rather than derived transformationally. He proposes to extend the base rules to accommodate the derived nominals directly; therefore the transformational component will be simplified in this analysis. This view has come to be known as the "lexicalist hypothesis".

Newmeyer (1971), on the other hand, argues that the lexicalist analysis is not convincing enough to reject the so-called "transformationalist hypothesis" which originated in the Lees' arguments of nominalization. He tries to derive the derived nominals by some extension of transformational apparatus. In the framework of the transformationalist hypothesis, the base structures are simplified while the transformational component is enriched. Lakoff and Ross (1970) and Ross (1973) show that there is no definite argument which rejects a transformational account of nominalization in favor of a lexicalist account.

Although the lexicalist position seems on the whole to be favored in the description of derived nominals in English,<sup>1)</sup> there are some problems

which could not be solved in this analysis lest there should be some modification in the proposed analysis. This paper is first to examine the two approaches—the lexicalist analysis and the transformationalist analysis—and review the main arguments that the two theories are based on, and then to point out some difficulties of the lexicalist position concerning the analysis of derived nominals in English.

## II

One of the strong arguments by the transformationalists for deriving derived nominals from a sentence is that they can account for the parallelism in the selectional and contextual restrictions between the derived nominals and their corresponding sentences. They claim that they can avoid duplicating the restrictions on nouns by deriving the nominals from their corresponding sentences. The following (1a) sentence, for example, shares cooccurrence restrictions with the (1b) noun phrase.

- (1) a. \*The lawnmower criticized the book.  
b. \*the lawnmower's criticism of the book

It is not necessary to state the restrictions shared by *criticize* and *criticism* twice, once for NP and once for S. Once we state the selectional restrictions on the verbs, the restrictions on the corresponding nominals will be automatically accounted for.

Newmeyer (1971 : 793), furthermore, states that the transformationalist hypothesis explains the difference of the following phrases in a natural way.

- (2) a. John's death in 1947 was a tragedy.  
b. John's house in 1947 was a split-level.

The prepositional phrase *in 1947* in the sentence (2a) has a different function from that of the sentence (2b) in that the former cannot be moved without changing the meaning of the sentence. The fact that nouns such as *death* are subcategorized with respect to time phrases and that such nouns as *house* do not occur in a single noun phrase with time phrases follows from the transformationalist analysis of deriving those nouns from underlying verbs. We need not specify nouns as cooccurring with time phrases. This will lead to a simplification in the lexicon.

Another argument for deriving derived nominals from a sentence concerns the relation of passive forms and active forms. Under the transformationalist hypothesis, the similarity of the two relations in the following phrases is explained like this:

- (3) a. the committee rejected John  
b. John was rejected by the committee
- (4) a. the committee's rejection of John  
b. John's rejection by the committee

All four phrases are derived from the same underlying form. (4a) is the result of nominalization operation. (3b) is derived by applying the general passive transformation, and (4b) is what we get when the underlying structure undergoes passive followed by nominalization. This account of derivation captures the fact that *the committee* and *reject/rejection* are in essentially the same grammatical relationship in those examples. Thus, the rules of derivation embodies a description of the intuitively felt relationships between these sentences and phrases without adding any complexity to the grammar.

A third argument for the transformationalist position concerns the semantic interpretation of derived nominals. It is an undeniable fact that the derived nominals have their individual ranges of meaning and varied semantic relations to their verbal or adjectival base forms. For example, the nominal *intelligence* can appear in the following sentences.<sup>2)</sup>

- (5) a. John's intelligence is undeniable.  
b. John's intelligence exceeds his foresight.

*Intelligence* in (5a) and (5b) have different meanings. The phrase *John's intelligence* can roughly be paraphrased as in (6a) and (6b) respectively.

- (6) a. the fact that John is intelligent  
b. the extent to which John is intelligent

The problem is more complicated when we find the same phrase used in the following sentence.

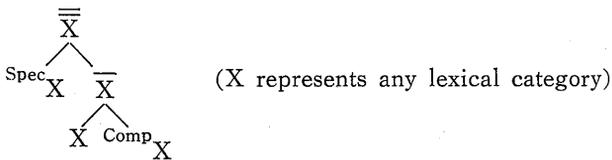
- (7) John's intelligence is his most remarkable quality.

Derived nominals are semantically so irregular that it appears very difficult, or almost impossible, to assign different underlying structures such as (6a) or (6b) in order to express the different meanings implied in each

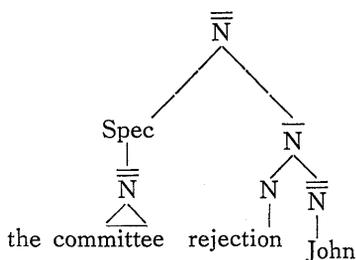
derived nominal. In fact, it might be extremely difficult to know how many underlying structures we need to postulate. Moreover, the transformationalist will have to postulate some syntactic rules to convert such underlying structures into their surface derived nominals. Despite such difficulties, however, it seems that, as far as semantic interpretation is concerned, the transformational derivation of derived nominals from underlying structures such as (6a) or (6b) proves to be effective in accounting for the different meanings of derived nominals. The paraphrase relationship between the noun phrase containing the derived nominal and the noun phrase containing the relative or appositive clause is focussed in this analysis. From the viewpoint of the problem of semantic interpretation, the transformationalist hypothesis has at least some point to be favored.

### III

According to the lexicalist hypothesis, such derived nominals as the subject of *the committee's rejection of John surprised him* do not arise from such paraphrases as the subject of *that the committee rejected John surprised him* by a transformation called "nominalization." They claim that they are rather nouns in deep structure. Chomsky (1970) uses the structural schema of the following.



His argument depends, at least in part, on his claim that, whether X is V or N, the corresponding structures exhibit significant parallels. Thus he posits an internal structure for NP's which corresponds to the internal structure of VP's, and proposes roughly the following underlying structure for the above derived nominal.



The derived nominal *the committee's rejection of John* is generated directly in the base with no nominalization transformation involved. *Reject* and *rejection* are related in the lexicon, not transformationally. He proposes that *reject* and *rejection* form a single lexical entry,<sup>9)</sup> neutral in the sense that they are unmarked for the syntactic feature differentiating nouns from verbs. *Reject* is entered in the lexicon as an item with certain fixed selectional and strict subcategorization features, which is free with respect to the categorial features [noun] and [verb].

The arguments in favor of the direct generation of derived nominals are based essentially on three evidences. The first argument concerns syntactic productivity and regularity. Compared with the process of gerundive nominals, that of forming derived nominals is irregular and not productive. While all sentences have gerundive nominals, many have no derived nominals. Chomsky cites, for example, such facts as those in the following as evidence for this.

- (7) a. John is certain (likely) to win the prize.
- b. John's being certain (likely) to win the prize
- c.\*John's certainty (likelihood) to win the prize

The lexicalist explanation for the ungrammaticality of the (7c) sentence follows automatically from their postulation that derived nominals will correspond to base structures rather than transforms. The (7a) sentence does not correspond to base structure.

The second argument concerns semantic regularity. The relationship between derived nominals and synonymous NP's with finite clauses is often idiosyncratic and one-to-many, while gerundive nominals have absolutely predictable semantic relationships with the parallel verbs.

Chomsky, for example, cites the different relationships in the following pairs as evidence for this.

laugh — laughter

do — deed

marry — marriage

This kind of idiosyncrasy and irregularity is typical of lexical structure, and he proposes to treat this problem within the lexicon. He claims that a transformational derivation of readings of these words from associated verbs must involve the presence of semantic material idiosyncratic to the particular nominalization.

The third is the internal structure argument. Derived nominals have the internal structure of NP's: they can follow determiners and adjectives, but can not take aspect, negation, or adverbs. Derived nominals moreover can be pluralized. These properties are quite in contrast with those of gerundive nominals.

- (8) a. the refusal of the offer  
b.\*the refusing the offer
- (9) a. the flat refusal of the offer  
b.\*the flat refusing the offer
- (10) a.\*John's have-en refusal of the offer  
b. John's having refused the offer
- (11) a.\*John's not refusal of the offer<sup>4)</sup>  
b. John's not refusing the offer
- (12) a.\*John's refusal too often  
b. John's refusing the offer too often
- (13) a. John's many refusals of the offer  
b.\*John's many refusings the offer

The lexicalist analysis correctly and automatically explains the syntactic differences between derived nominals and gerundives, for derived nominals are not transforms of sentences but are base noun phrases. The syntactic properties that the derived nominals have are exactly what we expect of nouns. These noun-like properties of derived nominals, the lexicalists claim, would require entirely ad hoc treatment in an analysis where derived nominals are treated as nominalizations—as consequences of trans-

formations of deep-structure sentences.

Now, what makes the lexicalist analysis more convincing in addition to the above three evidences is that they claim they can account for the apparent difficulties suggested by the transformationalist as elegantly as, or more convincingly than, under the transformationalist position. Concerning the problem of stating selectional restrictions on derived nominals and their associated verbs, they argue that even in the lexicalist approach the selectional restrictions need only be stated once. Since derived nominals and their corresponding verbs are treated as a single lexical entry, they are cospecified as having the same features. The only difference is under which node the lexical entry is inserted. When inserted under a verb node, it is realized as a verb: when inserted under a noun node, the same lexical entry is realized as a derived nominal. The lexicon will specify the similarity in selectional and subcategorical features with no difficulty. Thus, without appealing to transformational means, the relations among surface lexical formatives are expressed—that is, in the lexicon.

An attempt has been made by the lexicalist to explain the apparent difficulty of explaining the similarity in the relationship of the sentences (3) and those in (4). The solution for this is to extend the application of the passive transformation over the domain NP as well as S. By doing so, Chomsky claims that the relation between the active and passive forms of derived nominals can be explained without any extra rules being added. Moreover, he states that this solution captures similarities between the internal structure of noun phrases and that of sentences, which is exactly what his base rule schema intends to do. He argues that NP's like (4b) are passives of base-generated derived nominals, by independently motivated transformations, rather than being the nominalizations of passives.<sup>51</sup> They are derived from the same underlying forms as NP's like (4a), but they undergo the generalized form of the passive. The passive transformation is, as Chomsky states, performed by two rules—Agent-Postposing which has the operation of postposing the deep subject into the by-phrase, and NP-Preposing which has the effect of preposing the original object. The derivation of the noun phrase (4b) is roughly as follows.

(14) a. Underlying structure

- the committee rejection John by np<sup>6)</sup>
- b. Generalized Agent-Postposing in NPs and Ss
  - the rejection John by the committee
- c. Possessive Transformation<sup>7)</sup>
  - John rejection by the committee
- d. Poss Insertion
  - John's rejection by the committee

Thus the passive of base-generated derived nominal *John's rejection by the committee* is precisely a parallel to the passive sentence *John was rejected by the committee*. By extending the domain of the operation of passive to a noun phrase as well as a sentence, the lexicalist shows the alternative solution of passive forms of derived nominals.

#### IV

Keeping the above arguments in mind, let us examine some other properties of derived nominals. Concerning cooccurrence of adverb modifiers with derived nominals, Chomsky (1970 : 193) cites the following examples.

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

He states "that although gerundive nominalization applies freely to sentences with verb phrase adjuncts, this is not true of the rules forming derived nominals." His claim is that (16) is ungrammatical because "true verb phrase adjuncts such as before-clauses and because-clauses will not appear as noun complements in base noun phrases."

Now, Ross (1973 : footnote 113) argues against this Chomsky's explanation, saying that since Chomsky doesn't give any clear criterion for what is a verb-phrase adjunct and what is a noun-phrase adjunct, his account of the ungrammaticality of (16) is not convincing. He furthermore investigates other types of adverb modifiers and examines cooccurrence relationship of adverbs with derived nominals. The result of his examination is as follows (276-79).

- (17) a. ?\*His criticism of the book before he read it
- b. ? His criticism of the book before reading it
- c. ? His criticism of the book before its publication
- d. His criticism of the book before 1945
- (18) a. ??His destruction of the fortune cookie before he read the fortune is to be regretted.
- b. ?His destruction of the fortune cookie before reading the fortune is to be regretted.
- c. ?Dirty Dick's betrayal of his comrades before their examination of the manuscripts touched off a wave of riots in Canterbury.

As for (17a) = (16) Ross says in his footnote that "he does not find it as far out as Chomsky does." He also says that he finds (18a) far superior to Chomsky's example (16), especially when *criticism* has the reading not of an event, but of something that has been written. There is some difference in their judgement of those sentences and, the matter of acceptability and grammaticalness is, indeed, a subtle problem. What is to be considered, moreover, is that Ross finds (17b) and (18b) not ungrammatical, though they are marginally acceptable.

In connection with the above sentences, the following sentence is to be considered.

- (19) His discoveries as he burrowed toward the bottom were important ones, though they scarcely interested him.

Robert Silverberg, *Lost Cities and Vanished Civilizations*

The sentence (19), with a derived nominal and a true verb phrase adjunct involved, is perfectly grammatical. It does not seem to be formed by analogy to some gerundive nominal with the verb *discover*, as is suggested by Chomsky for the explanation of the possibility that some speakers might find the expression of (16) acceptable (1970 : 194). The noun phrase *his discoveries as he burrowed toward the bottom* can appear at least in such a context as (20) which is provided by Chomsky.<sup>81</sup>

- (20) \_\_\_\_\_ are to be found on page 15.

How does Chomsky's lexicalist analysis account for the adverbial construction in (19) and also for (17b), (18b), etc., which are judged grammatical, though with lower acceptability? Are they to be interpreted

as what Chomsky calls “not true verb phrase adjuncts”? Here Chomsky’s explanation of a verb phrase adjunct or a noun-phrase adjunct seems to fail. In order to account for such phrases under the lexicalist position, we will need to add some kind of adverb node to the underlying structure of derived nominals. Jackendoff (1974), who makes some refinements and modifications in Chomsky’s treatment in favor of the lexicalist hypothesis, includes prepositions in the schema and takes the position that subordinating conjunctions are prepositions rather than adverbs. Thus adverbial clauses such as *when-*, *before-*, *as-*, etc. are interpreted as prepositions followed by S complements.<sup>9)</sup> Whether we try to set up in the base noun phrase an adverb node or PP node to introduce subordinate clauses, we would fall into difficulty under the lexicalist framework, anyway. Reasoning that nouns with nominalization morphology, such as *refusal*, *criticism*, *destruction*, etc., should not be generated transformationally but be generated directly in the base, the lexicalist comes to the same conclusion for such nouns as *book*, *weather*, *house*, etc. Therefore, the setting up of the node for such adverbial expressions in the base noun phrase would make it impossible to explain the ungrammaticality of such structures as *\*his book before reading it* or *\*his idea as he walked toward the station*. Verb phrase adjuncts such as in (15), (16), (17), (18), (19) and also in *his criticism of the book for its failure to go deeply into the matter* (cited by Chomsky as a grammatical expression in contrast to (16)), etc. are indeed problematical under the lexicalist treatment of derived nominals.

Now, the problem mentioned above would not be solved easily under the transformationalist hypothesis, either. However, the distinction between such grammatical phrase as *his discoveries as he burrowed toward the bottom* and the ungrammatical phrase such as *\*his idea as he walked toward the station* may be explained more convincingly if we assume that derived nominals should have a sentential source and be generated transformationally. One such possibility is suggested by Ross (1973). His schema is roughly as follows.

- (21) a. Nominalization has as an underlying structure an abstract head noun which is modified by a sentence. (Remote structure)
- b. The modifying sentence becomes a derived nominal modifier of

the abstract head noun. (Nominalization)

c. The head noun is deleted. (Beheading)

For example, *Fred's sallowness exceeds Tom's* and *His visits to us doubled* are derived in the following way respectively.

(22) a. The extent to which Fred is fallow exceeds Tom's.



(Remote structure)

b. The extent of Fred's sallowness exceeds Tom's. (Nominalization)



c. Fred's sallowness exceeds Tom's. (Beheading)<sup>10</sup>

(23) a. The frequency with which he visited us doubled.



(Remote structure)

b. The frequency of his visits to us doubled. (Nominalization)



c. His visits to us doubled. (Beheading)

As Ross himself states, the analysis has many questions of details that remain to be answered, and therefore it cannot be considered a complete theory. In fact, it may not be an easy thing to postulate such underlying structures for all derived nominals. But, on the other hand, it seems also true that the analysis has a number of desirable points. It seems at least possible to account for a varied range of meaning of derived nominals under this line of derivation.

Under the assumption that derived nominals have a sentential source in favor of Ross' analysis stated in the previous paragraph, cooccurrence relationship of *as he burrowed toward the bottom* in (19) or *before reading the fortune* (18b), etc. with derived nominals would be explainable. The derivation of the derived nominal in (19) would perhaps look like the following.

(24) a. The significance of what he discovered as he burrowed toward the bottom was important.

b. The significance of his discoveries as he burrowed toward the bottom was important.

c. His discoveries as he burrowed toward the bottom were important.

The problem implied in the examples (15) and (16) given by Chomsky seems to be more serious and more complicated than the lexicalists think, and contrary to their expectation, this might give some support for the transformationalist arguments of nominalizations which, it is claimed, must derive from full sentence.

Another interesting argument which seems to refute the lexicalist hypothesis of disallowing derived nominals from having a sentential source is raised by Lakoff and Ross (1970). They suggest the possibility of the nominalization such as in (25) having the indirect question whether-clause as a potential source.

(25) ?Our survival depends on the availability, or not, of fresh bagels. They observe that the derived nominal *the availability, or not, of fresh bagels* can occur when the corresponding whether-clause *whether fresh bagels are available or not* can occur. They conclude, therefore, that the derived nominal in (25) is derived from the underlying structure which has a sentential disjunction and a sentential *not* and through the deletion of the rightmost S. Ross and Lakoff gives (25) a question mark implying that it is not completely grammatical, and this is the very point that is refuted by Brame and Lasnik (1970), who blame the transformationalists for basing their theoretical position on such a tenuous distinction in grammaticality. However, it does not seem impossible to find the examples of derived nominals with or-not which are quite grammatical. For example,

(26) ...and the operation or not of Psych Movement is irrelevant to almost all of the issues dealt with crucially in this study.

Postal, *On Raising*, 1972, 291

Structures like (25) or (26), though limited in use, would be difficult to explain unless derived nominals have a sentential source. Here again, Ross' proposal seems to offer one possible solution. Thus (26) would have the following derivation.

(27) a. ...the question of whether Psych Movement operates or Psych Movement does not operate is irrelevant to almost all of the issues dealt with crucially in this study.

- b. ...the question of the operation or not of Psych Movement is irrelevant to almost all of the issues dealt with crucially in this study.
- c. ...the operation or not of Psych Movement is irrelevant to almost all of the issues dealt with crucially in this study.

It is to be noted that, although the set of restrictions seems necessary on the underlying structures (a head noun and the embedded sentence being nominalized),<sup>11</sup> the derived nominals in those cases could possibly be accounted for by positing an underlying structure with a sentence for them.

## V

I have examined two hypotheses on the nature of deep structure of derived nominals in English: the transformationalist hypothesis and the lexicalist hypothesis. Some of the main arguments of the former are (1) parallelism in the selectional and subcategorization features between derived nominals and their corresponding sentences (2) similarity in their grammatical relations, and (3) on the basis of semantic interpretation. Hence their claim for deriving all kinds of nominals, including derived nominals, that are related to verbs and adjectives from underlying sentential structures. The arguments against this transformationalist position are (1) irregular syntactic relations between derived nominals and their associated sentential sources (2) idiosyncratic semantic relations of derived nominals, and (3) noun-like properties of derived nominals. The lexicalists claim those inconsistent properties are difficult to explain under the assumptions of a transformational derivation, but can be explained by postulating that parallel but distinct structures containing derived nominals and derivationally related verbs or adjectives are generated at the outset. They propose the X-Bar Convention to show the essentially parallel structures incorporating nouns and verbs (and adjectives). Thus derived nominals are directly generated in the base. The extension of passive over the domain of NP as well as S is a device to capture similarities between the internal structure of noun phrases and the internal structure of sentences.

The lexicalist analysis is well motivated. However, it is not free from difficulties. One of them concerns cooccurrence of some kind of subordinating adverbial modifiers with derived nominals. The proposed structural schema for derived nominals does not allow what Chomsky calls verb phrase adjuncts to appear in the base. A modification in the deep structure of derived nominals would create a new problem. Or-not expression seems to be another problem to the lexicalist. I have shown that it is possible to adopt Ross' proposal to account for them. The derivation of derived nominals from abstract head nouns such as *the fact*, *the extent*, *the manner*, *the question*, etc. with embedded sentences seems to be an attractive proposal for the explanation of those difficulties.

## NOTES

1. Concerning the problem of action nominals, there have been heated arguments between the lexicalist position and the transformationalist position. See Chomsky (1970), Wasow & Roeper (1972), and Thompson (1973) for the former account, and Newmeyer (1970) and Fraser (1970) for the latter. Newmeyer and Fraser use the term "action nominals" while Wasow & Roeper use the term "nominal gerunds." Chomsky's "mixed forms" correspond to these nominals.
2. Actually Chomsky (1970 : 217, n. 11) gives these examples to show the difficulty of explaining the idiosyncratic character of the relation between the derived nominals and the associated verbs or adjectives under the transformationalist approach.
3. Jackendoff treats them as separate lexical entries. Their relationship is specified by a lexical redundancy rule.
4. The following examples from OED show that derived nominals could be used with negation, historically.
  - (i) The not possibilitie of erring being...peculiar unto God (1599), Sandys, *Euroae Spe.*
  - (ii) [They] redeemed their not obedience to him, by offering up their bodies. (1643), Dudley Digges, *Unlawf Armes*
  - (iii) In case of not-guiltiness (1818), Bentham, *Ch. Eng. Catech. Exam.*
5. Chomsky, 1970, 205.
6. Lower case indicates empty node.
7. I use Emonds' term 'the possessive transformation' instead of NP-Preposing. As Emonds shows, the NP-preposing in NP's has different properties from the NP-preposing in S's. This leads him to use the term 'Possessive transformation.' See Emonds (1976 : 96) Jackendoff (1974) also recognizes this difference and he uses the terms 'Passive Part 2 in S's' and 'NP-preposing in NP's.'
8. If the phrase appears in the object position, the sentence becomes ambiguous, and it will be more natural to interpret the adverb clause as modifying the main verb.
9. Emonds (1976) also takes the position that the node label PP indicates not only prepositional phrases in the traditional sense of that term but also certain clauses introduced by subordinating conjunctions.
10. Ross claims that this rule is independently motivated. See Ross, 1973, 270.

11. The following sentences are not grammatical.

(i) \*The availability, or not, of fresh bagels surprised us.

(ii) \*Our success depends on his refusal or not.

The ungrammaticality of (ii) is pointed out in Brame & Lasnik (1970). One possible way to block these sentences under the transformationalist framework would be to impose some constraints on the underlying head noun and the embedded sentence being nominalized. This is what Fraser (1970) suggests in his analysis of action nominalization.

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