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Comparative Complementation with Verbs of Appearance in English

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1. The Problem

An understanding of the syntactic and semantic properties of the two constructions illustrated in (1) has been an important achievement of generative grammar and has played a key role in the development of current syntactic theories.

(1) a. It seems/appears (to me) [$_{S'}$ that the tire's flat].
b. The tire$_i$ seems/appears (to me) [$_S$ t$_i$ to be flat].

As is well known, in classical transformational grammar and its derivatives in which transformations are preserved in some form, the (b)-sentences are related, in part, to the (a)-sentences by RAISING, a phenomenon whereby what is the subject of the embedded clause at an underlying level of representation becomes the subject of the main clause at a superficial level of representation.[1] More precisely, in the principles and parameters framework, as developed in Chomsky (1981) and much subsequent work, it is assumed that such verbs have no external argument (or underlying subject) and subcategorize for either a tensed or infinitival clausal complement. When the complement is infinitival, its subject must move into the empty subject position of the main clause in order to be Case-marked, since there is no Case-assigning governor of the embedded subject position and all NPs must be assigned Case; the result is the construction in (1b), in which a trace of the moved NP occupies the embedded subject position. When the complement is tensed, the embedded subject finds a Case-assigning governor within the complement itself (i.e., the agreement inflection); the result is the construction in (1a), in which the underlyingly empty main clause subject position is filled by the expletive pronoun *it*.

A much less celebrated fact about *seem* and *appear* is that their state of affairs argument, otherwise expressed as a tensed clause (with or without the complementizer *that*), can also be expressed as what I will call a COMPARATIVE COMPLEMENT, that is, a phrase headed by *like* or *as if*, as shown in (2) and (3).[2]

(2) a. It seems (to me) like the tire's flat.
b. The tire seems (to me) like it's flat.
(3) a. It appears (to me) as if the tire's flat.
b. The tire appears (to me) as if it's flat.

These constructions present a problem that can be summarized as follows. Since (2a) and (3a) and the corresponding sentences in (1a) are thematic paraphrases, it must be the case that *seem* and *appear* have the same argument structure whether they take a clausal complement or a comparative complement, which is to say, they have an optionally expressed experiencer argument and a state of affairs argument.[3] If this is so, a question arises as to the status of the referential main clause subjects in (2b) and (3b). It would apparently not suffice to analyze verbs of appearance as having an optional third argument, since if such were allowed one would expect this argument to be able to surface in the construction with the tensed clausal complement — something that is not possible, as illustrated by (4).

(4) * The tire seems (to me) that it's flat.

Thus, where the subjects in (2b) and (3b) come from is not altogether clear.

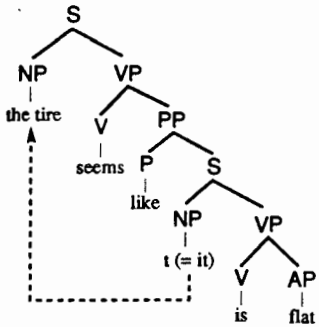
In this paper I consider some different potential solutions to this problem and present some arguments for adopting one and rejecting the others. Having proposed and justified an analysis that arises as a natural possibility within the principles and parameters framework, I briefly discuss what I see as outstanding questions concerning this phenomenon.

2. Some Nonsolutions and a Solution

2.1. *The Copy Raising Hypothesis*

The first possibility I want to consider is that the relationship between (1a) and (1b) is in relevant respects the same as that between the (a)-sentences and the (b)-sentences in (2) and (3) — a hypothesis that seems quite natural given the structural and semantic parallels. More specifically, following the analysis originally proposed for this phenomenon within classical transformational grammar by Rogers (1971, 1972) and Postal (1971, pp. 162–163), one might analyze the (b)-sentences as involving so-called COPY RAISING, essentially as has been proposed for Modern Greek (Joseph 1976, Perlmutter and Soames 1979, §43) and other languages. This analysis is illustrated in (5).

(5)



The idea would be that an NP from within the clausal complement of *like* optionally raises into the underlyingly empty subject position of the *seem* clause, the main difference between this construction and that exemplified by (1b) being that the trace is governed by a Case assigner. One might simply suppose that Case-marked traces of NP movement are necessarily overtly realized, taking the shape of pronouns.

One apparent virtue of this kind of analysis is that it provides a possible explanation for why a pronoun in the comparative complement must be bound by the referential subject of *seem*, if it has one, as shown by (6).

(6) Wayne$_i$ seems like he$_i$/*you/*I/*Garth must be in trouble.

The explanation would be that raising necessarily involves leaving a trace; if the trace happens to be Case-marked, it is overt. Another potential virtue of this approach is that it would provide an interesting kind of motivation for trace theory, if it turned out to be correct, since the visibility of the trace would make its existence hard to question.

Unfortunately, there are serious problems with such an analysis. To begin with, the BINDING THEORY is specifically designed to prohibit raising out of a tensed complement clause. Principle A of the binding theory requires that a trace of NP movement (being an anaphor like reflexive pronouns) be bound within a domain defined (sufficiently precisely for present purposes) as the minimal clause containing it, unless it is the subject of an infinitival clause, in which case the domain is the minimal clause containing the infinitival clause. If raising were allowed in cases such as (2b), the binding theory would have to be relaxed in such a way as to allow raising out of a tensed clause, in which case there would be no obvious explanation for the ungrammaticality of (4).

A second and much more serious problem with the copy raising hypothesis is that it leaves unexplained the fact that the construction exemplified by (2b) systematically differs from the raising construction with respect to established criteria for a raising analysis. Consider, for example, the implications of examples involving quantified NPs, as in (7).

(7) a. Some customs official checked every passing car.
Ambiguous as to whether or not for each car the *same* customs official did the checking
b. Some customs official seems to have checked every passing car.
Ambiguous in same way as (7a)
c. Some customs official seems like he has checked every passing car.
Unambiguous: must be the *same* customs official for each car

Following Burzio (1986) and May (1977), a reasonable account of this ambiguity is that the two quantifiers can be ordered differently at the level of LOGICAL FORM (LF), the relative ordering corresponding to the different readings. The LF representation in which *some* has "wider scope" than *every* is shown in (8a).

(8) a. ($\exists x$, x a customs official) ($\forall y$, y a passing car) (x checked y)
b. ($\forall y$, y a passing car) ($\exists x$, x a customs official) (x checked y)

This representation corresponds to the reading according to which the same customs official did the checking for every car. The other reading corresponds to the case where *every* has wider scope than *some*, as shown in (8b). The fact that (7a) is ambiguous is due to the possibility of any relative ordering of quantifiers within a given clause. Now although quantifier scope is generally clause-bound, (7b) is ambiguous in the same way as (7a), even though the *some* phrase has raised in the syntax to the main clause. The explanation is that quantified phrases can be reconstructed into their trace's position at LF, allowing for the variable ordering of quantifiers within the embedded clause in the case of (7b). Crucially, if raised NPs can be reconstructed into their trace's position at LF, one would expect to find the ambiguity in question in cases like (7c), if this sentence involves raising of the sort schematized in (5). However, the only reading available is that with *some* having wider scope than *every*.

Another well-known defining characteristic of the raising construction is that its meaning does not change as a function of whether the complement clause whose subject has apparently raised is active or passive. Consider in this light the following two scenarios. In the first a doctor has just finished attending to a patient and she comes into the waiting room alone with blood all over her. In the second

scenario the patient comes into the waiting room alone with blood all over him. As illustrated by the sentences in (9), active/passive paraphrases of the infinitival complement construction with *seem* are cognitively synonymous, both versions being appropriate as descriptions of either scenario.

Scenario 1: The doctor (alone) emerges into the waiting room with blood all over her
Scenario 2: The patient (alone) emerges into the waiting room with blood all over him

(9) a. The doctor seems to have butchered the patient.
b. The patient seems to have been butchered by the doctor.
OK both scenarios

The active and passive versions of the comparative complement construction, on the other hand, are not synonymous in this way, as shown by the examples in (10).

(10) a. The doctor seems like she has butchered the patient.
OK scenario 1 only
b. The patient seems like he has been butchered by the doctor.
OK scenario 2 only

The active version is an appropriate description of only scenario 1; the passive version of only scenario 2. There is no apparent account of why there should be such a difference, if the sentences in (10), like those in (9) involve raising.

Finally, there appears to be a significant difference between the two types of construction with respect to their tolerance for nonargument subjects that must be analyzed as originating in the embedded clause — i.e., expletive *there*, and pieces of idiomatic expressions. As shown by the contrast between (11) and (12), nonargument subjects that originate in the complement are generally fine with *seem* when it takes an infinitival complement but not when it takes a comparative complement. It is unclear why there should be such a contrast, if both constructions involve raising.[4]

(11) a. There seems to have been an accident.
b. Not much attention seems to have been paid to the details.
c. The cat seems to have your tongue. (Idiomatic)
(12) a. * There seems like there/it has been an accident.
b. * Not much attention seems like it has been paid to the details.
c. * The cat seems like it has your tongue. (Idiomatic)

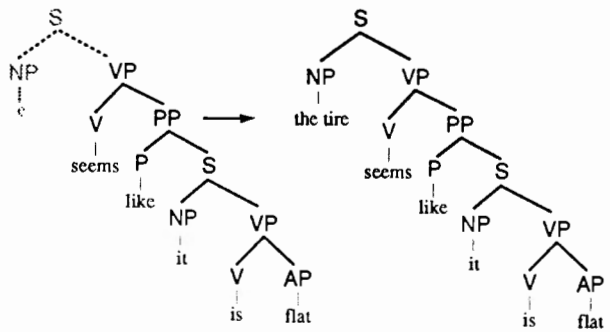
In short, the obstacles facing the copy raising analysis schematized in (5) seem to be insurmountable. This analysis not only requires weakening the binding theory in such a way as to lose an explanation

for the ungrammaticality of (4), but it also leaves several important differences between the comparative and infinitival construction unaccounted for.

2.2. *Out of Thin Air Hypothesis*

A second possibility is that in a way similar to that suggested by Chomsky for the *tough* movement construction (as in *Wayne is tough to trick*), a referential NP may be inserted into the nonthematic subject position of verbs of appearance, either at S-structure (Chomsky 1981, pp. 312–314) or by GENERALIZED TRANSFORMATION (Chomsky 1992), as shown in (13).

(13)



The problem with such an analysis is that, unlike with the *tough* movement construction, it does not seem possible to link this operation to an independently justifiable restructuring process and thus there is no apparent way to limit it for principled reasons to just the construction for which it is needed. It is unclear what would prevent this kind of operation from taking the structures underlying (14a) and (15a), for example, and giving (14b) and (15b) as output.

(14) a. It seems that it's flat.
b. * The tire seems that it's flat.
(15) a. It's obvious that he likes Garth.
b. * Wayne's obvious that he likes Garth.

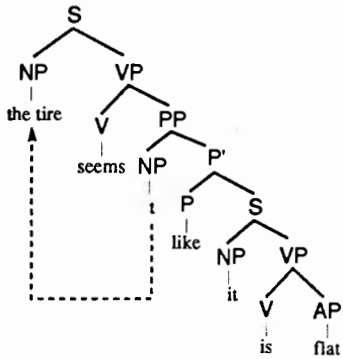
There is, then, a good reason for rejecting this hypothesis as well.

2.3. *Raising from Small Clause Hypothesis*

Fortunately, there is an analysis that solves or avoids the various problems that face the two rejected hypotheses. This analysis is built on the idea that the subject of sentences such as (2b) and (3b) is indeed

a raised NP; however, unlike on the copy raising analysis, it is an ordinary raised NP that leaves an ordinary trace that is both phonologically null and properly bound. Since the trace is an ordinary one, it clearly cannot be located within the complement of *like*. There is, then, only one natural possibility: it must be the subject of *like*. A comparative complement must be able to be analyzed as a so-called SMALL CLAUSE, whose subject, having no governing Case-assigner, moves to the nonthematic subject position of *seem*, as shown in (16).[5]

(16)



Given such an analysis, it is clear, to begin with, why examples like (4) (**The tire seems (to me) that it's flat*) are ungrammatical. As *that* is a complementizer rather than a comparative preposition, it does not have an external argument. Since *seem* has only experiencer and state of affairs arguments, there is no source for the referential subject in this example. The standard account of (4) can be maintained. Furthermore, all of the differences observed above between the comparative complement construction and the infinitival complement construction follow naturally from this analysis. Consider the restriction on quantifier interpretation illustrated by the examples in (7), for example. The subject position of the small clause is a thematic position, filled at D-structure. A quantified NP occupying this position could not possibly be reconstructed at LF into the clause embedded under *like*, since it does not originate there. Hence, *some* must have wider scope than *every* in (7c). A similar explanation is available for the meaning difference between the corresponding active and passive versions of the comparative raising construction, illustrated by (10a) and (10b). This difference can be attributed to the fact that the external argument of *like* is different in the two cases. (10a) is a statement about what the doctor is like; (10b) is a statement about what the patient is like. The fact that a nonargument from the complement of *like* cannot be the subject of *seem* (as illustrated by the

examples in (12)) follows as well from the fact that there is simply no raising out of the complement of *like*, as guaranteed by Principle A of the binding theory.

There is also some independent motivation for the claim that comparative prepositions can have an external argument. In cases like (17a-b), the NP expressing the putative external argument shows up in situ — something made possible, apparently, by the fact that verbs such as *imagine* are Case-assigning governors of this position.

(17) a. Try to imagine/picture/remember [Wayne like he was as a child].
b. I want you to imagine [your brother as if he had been drinking].

One piece of evidence for the claim that the bracketed string is a phrasal constituent in this construction comes from its ability to be the focus in the pseudocleft construction, something that is only possible for constituents, as is well known. (18a) illustrates this possibility.[6]

(18) a. What I want you to imagine is [Wayne like he was as a child].
b. I can remember both [Wayne like he was as a child] and [Garth like he was as a teenager].
c. * I persuaded both Garth to sing a song and Wayne to dance.

It is also possible to conjoin this string with another like string in a coordinate construction governed by *both*, as shown in (18b). This kind of coordination is not possible with nonconstituents, as shown, for example, by (18c).

The generalizations that emerge are that there is a certain class of cognitive verbs, including *seem, appear, imagine, remember*, and *picture*, whose state of affairs argument can be expressed as a PP complement with *like* and/or *as if* as head and *like* and *as if* have an optional external argument. The fact that the external argument of the comparative phrase must raise with verbs of appearance and cannot raise with verbs in the *imagine* subclass follows from independently needed aspects of the analysis of these verb types: verbs of the *seem* type lack an external argument and accusative Case, verbs of the *imagine* type do not. Thus, a straightforward analysis is available for the type of raising that occurs with comparative complements embedded under verbs of appearance. The only stipulations needed are that verbs of appearance subcategorize for a comparative complement and comparative prepositions have a potentially transitive argument structure — much like verbs such as *open* and *melt*. These truly inescapable stipulations are not unlike those needed quite generally for argument-taking lexical items. The syntactic properties of the construction follow as a consequence of these minimal assumptions and general principles of universal grammar.

3. Remaining Questions

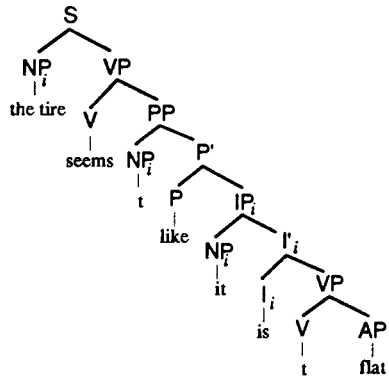
There are of course potential problems and further issues that a more comprehensive study would need to address. I would like to briefly examine two questions that remain in my mind. The first has to do with dialectal variation. There are apparently speakers who accept nonargument subjects in the comparative complement construction, that is, as in examples such as those in (12). Indeed, the motivation for the copy raising analysis proposed by Rogers and Postal was that they considered such examples to be acceptable.[7] Given this difference, the possibility that some version of the copy raising analysis may be valid for some speakers cannot be dismissed. What precise form it would have to take and how the problems raised by such an analysis might be overcome are, however, not clear. One possibility of course is that examples such as those in (11) do not provide evidence for raising for these speakers. Another possibility is that these speakers have the structure shown in (16), but allow copy raising from the complement of *like* into the subject position of the small clause — and, in a second step, ordinary raising into the main clause subject position. While this kind of analysis would involve a binding theory violation, it would at least provide a potential means of differentiating comparative complements from tensed complements and thus of accounting for the ungrammaticality of the structure illustrated by (4).

A second remaining question concerns the fact that the raised NP that occupies the subject position in the *seem* clause must apparently bind a pronoun within the complement of *like*, as illustrated by (6) (*Wayne*$_i$ *seems like he*$_i$*/*you/*I/*Garth must be in trouble*). Now, consider the fact that an NP can be the complement of *like*, in which case it is construed as a secondary predicate that takes the superficial subject of *seem* as its subject, as illustrated by (19).

(19) Wayne$_i$ seems [$_{PP}$ t$_i$ like [$_{NP}$ a nice guy]$_i$]

A natural way of approaching this question would be to consider the complement of comparative prepositions to be a secondary predicate whether it is a clause or an NP. Such an approach is appealing in that nothing beyond what is needed for (19) would have to be posited in order to explain (6). Assuming that secondary predication involves coindexing of an argument of the primary predicate with the secondary predicate (e.g., Napoli 1989, Williams 1980, Culicover and Wilkins 1984), (20) would necessarily be the structure of *The tire seems like it's flat*, given standard conventions for specifier–head agreement and mother–head index sharing.

(20)



That the subject of the clausal complement of *like* is pronominal and necessarily bound by the superficial subject of *seem* follows as a consequence. The problem is that this analysis seems to entail a false claim — i.e., that the bound pronoun must be the subject of the clausal complement of *like*. Although examples such as (21a) and (21b) make clear that it is not the case that a bound pronoun anywhere in the complement of *like* suffices, (21c) shows that a subject only constraint is too strong.

(21) a. * Wayne$_i$ seems like Garth thinks he$_i$ must have been hurt.
b. * Wayne$_i$ seems like Garth doesn't like his$_i$ sister.
c. Wayne$_i$ seems like something's bothering him$_i$.

In fact, *look*, which otherwise has the properties of *seem* with respect to comparative complementation, allows nonsubject pronouns to satisfy the pronoun binding constraint perhaps even more freely than *seem*, as shown by (22a-b); although, again, there are limits, as (22c) demonstrates.

(22) a. Ted$_i$ looks like Jane has been hassling him$_i$ again.
(from Postal 1974, p. 268)
b. Ted$_i$ looks like his$_i$ wife tried to cut his$_i$ hair again.
c. * Ted$_i$ looks like Jane thinks Wayne has been hassling him$_i$ again.

It appears that the complement of *like* must be fundamentally about its subject, in some sense that is difficult to make precise. Presumably, this is a fact about the semantics of comparative prepositions. How exactly it should be dealt with formally and whether it in fact reveals

something more general about the nature of secondary predication are intriguing questions that invite further investigation.

4. Conclusion

Comparative complements with verbs of appearance are initially perplexing in that they both appear to allow raising and not to allow it. Two seemingly plausible analyses were considered and shown to be problematic. The copy raising approach advocated in previous work on this construction (Rogers 1971, 1972, Postal 1971) runs into trouble with the binding theory and fails to account for certain differences between comparative and infinitival complement constructions. Although perhaps technically viable, the possibility that the apparent raised NP is inserted into the nonthematic subject position at S-structure (or by generalized transformation) fails to yield a satisfying explanation, since there is no principled reason for restricting such an operation, if allowed, to just the construction in question. A straightforward analysis turns out to be possible by appealing to the theoretical construct known as a small clause, i.e., a phrase not headed by a verb which nevertheless has a subject position. The main clause subject in sentences such as *The tire seems like it's flat* has been raised from the subject position of the PP headed by *like*. To the extent that the analysis is successful, it offers additional motivation for recognizing small clauses and for a theoretical framework in which such an analysis can be naturally expressed.

Acknowledgments

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Notes

[1] Although many theories do not allow transformations as such, they generally have some kind of analogue of raising. The problem dealt with here could thus be cast and investigated in a similar way in most theories of syntax.

[2] With *seem* either *like* or *as if* may be used; *appear* does not allow *like*. *As though* is an alternative to *as if* that is preferred by some speakers. Some verbs of appearance (e.g., *look* and *sound*) take a comparative complement but neither an infinitival nor a tensed complement.

[3] The claim is not of course that the two types of sentence are necessarily entirely semantically equivalent; rather, it is simply that both types of complement express the same semantic argument of *seem*. It is possible that *like* or *as if* contribute to the overall meaning in some way that *that* does not, although what exactly this contribution is is not obvious. It has been suggested to me that what I call comparative complements may be adjuncts. Although it is true that the comparative construction can function as an adjunct in some cases (as for example in *Wayne wolfed down the pizza (as if he hadn't eaten in days)*), there are good reasons for analyzing it as a complement when it occurs with verbs like *seem* and *appear*. First, unlike adjuncts in general, it cannot simply be omitted (**The tire seems*, **It seems*), which indicates that it expresses a semantic argument. Second, since extraction from adjuncts is not otherwise possible (due to Huang's (1982) CONDITION ON EXTRACTION DOMAIN or whatever principle is assumed to hold an explanation for the ungrammaticality of **Who did Mary cry after John hit?*), the fact that it is possible to extract a *wh* phrase from within a comparative complement (as for example in *Which of these does it seem like Wayne made?*) suggests rather clearly that it is not an adjunct.

[4] There is apparently some variation across speakers with respect to examples like those in (12). This issue is taken up in §3.

[5] There have been different implementations of the idea of a small clause. Although it is not clear if anything hinges on implementation in the present context, I have in mind here the approach proposed by Stowell (1983). The idea is simply that various kinds of maximal projections (PPs, APs, etc.) can have subjects. In an analysis like that adopted here, Stowell appeals to the idea of raising from an adjectival small clause to account for cases such as *The proposal seems absurd*.

[6] For some reason, constituency tests give somewhat less clear results with the *as if* complements than with *like* complements. Some speakers find examples such as (?)*What I want you to imagine is your brother as if he had been drinking* less than perfect. Still, for everyone there appears to be a sharp contrast between such examples and clearly ill-formed attempts to put nonconstituents in the focus position in the pseudocleft construction (for example, **What I want you to persuade is your brother to quit drinking*).

[7] Their examples are with verbs such as *look* and *sound*. For me, these basically only differ from *seem* in that they do not occur in constructions of the type illustrated in (1). I assume therefore that their judgments would probably also differ from mine with respect to examples such as in (12).

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