

A CONSTRAINT ON TOUGH-MOVEMENT

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Tough-movement is the rule that derives sentences like

- (1) John is hard (for me) to get along with

from structures like those that underlie sentences like

- (2) To get along with John is hard (for me)

This rule was first proposed in Rosenbaum (1967), and was discussed in somewhat more detail in Postal (1971)¹. Recently, however, several people have suggested that sentences like (1) are not produced by a movement rule at all (and therefore have no underlying relation to sentences like (2)), but rather are produced by a deletion rule from an underlying structure something like²

- (3) [_SJohn [_{VP}is hard (for me) [_{VP}to get along with him]]]

While I will not argue against this underlying structure in any detail (see Berman and Szamosi (1972) and Berman (ms) for detailed arguments against such a structure), I will establish salient points of the analysis of sentences like (1) that I am assuming, before going on to discuss the constraint on the rule that I wish to propose. Consider first sentences like³

- (4) a. Headway should be easy to make in cases like this
b. A good impression is hard to make
c. Allowances are easy to make for the very young
d. Appearances are difficult to maintain when you are poor
(5) a. The hatchet is hard to bury after long years of war
b. The ice was hard to break at first

In all of these, the surface subjects are parts of idioms: nouns like headway and appearances never occur independently, but are possible only as parts of the idioms make headway and maintain appearances, while the other nouns appearing as subjects in the sentences of (4) and (5) are meaningful only when interpreted in the context of idiomatic phrases like make a good impression, bury the hatchet, etc. The fact that such nouns show up as subjects in sentences like those above provides extremely strong evidence that the structure given in (3) above is incorrect, and that a movement rather than a deletion rule is involved in the derivation of sentences like (1).⁴

Sentences like those of (6) show that direct objects, indirect objects, and objects of various prepositions are all susceptible to Tough-movement:

- (6) a. Mary is hard (for me) to like

- b. Mary is easy (for me) to talk to
- c. Mary is difficult (for me) to write letters to
- d. Mary is pleasant (for me) to be with
- e. Candlelight is impossible (for me) to study by
- f. This violin is easy (for me) to play sonatas on

Sentences like (6c) and (6f) show that it is, in general, possible to Tough-move a noun phrase across another noun phrase. Sentences like those of (7) show that Tough-movement must be stated with an essential variable:

- (7) a. John will be impossible to get Mary to invite to the party
- b. That question is unreasonable for you to expect John to be able to answer
- c. That book will be impossible for you to convince the class to try to finish before Monday

Tough-movement, then, moves some noun phrase out of an embedded predicate into matrix subject position. It can be seen from the sentences below that it cannot move embedded subjects:

- (8) a. [For your letter to be under this bed] is impossible
- b. *Your letter is impossible to be under this bed
- (9) a. [For it to rain on St. Patrick's Day] is impossible
- b. *It is impossible to rain on St. Patrick's Day
- (10) a. [For there to be five mistakes in this manuscript] is impossible
- b. *There is/are impossible to be five mistakes in this manuscript

I shall further argue that it cannot move an object across the subject of the embedded clause, and thus that any occurrence of a for-NP phrase in a Tough-moved sentence is, in fact, a matrix prepositional phrase (as in (2)).

Note first that Tough-movement cannot apply to the structures underlying (8a)-(10a), even when an object is being moved:

- (11) a. *This bed is impossible for your letter to be under
- b. *St. Patrick's Day is impossible for it to rain on
- c. *This manuscript is impossible for there to be five mistakes in

Since impossible normally permits Tough-movement (cf. (6e), (7a), (7c)), it would be impossible to block sentences like (11) unless some restriction on movement across subjects existed.

Second, the noun phrase in the for-phrase of a Tough-moved sentence must be animate (and probably human).⁵ If the for-NP was really a complementizer+subject, this would be a very strange restriction, since we would predict that anything that could be a subject (originally or derived) could show up in such a for-phrase.

Third, there are several adjectives which allow Tough-movement which elsewhere can show up with both a matrix prepositional phrase

and an embedded subject:⁶

- (12) a. For his children to go to that school is difficult for John
- b. It is difficult for John for his children to go to that school
- (13) a. For Mary to teach that course would be good for her
- b. It would be good for Mary for her to teach that course

If, however, we apply Tough-movement to the structures underlying such sentences, the outputs are hopeless:

- (14) a. *That school is difficult for John for his children to go to
- b. *That course would be good for Mary for her to teach

Here again, it seems that some restriction on Tough-movement across subjects is necessary, since the ill-formedness of the sentences of (14) cannot be due to any constraint on either the adjectives involved nor the nature of the embedded predicates.

Finally, consider a sentence like

- (15) It would be impossible for John to read that book

Such a sentence is ambiguous between a reading in which for John is a matrix prepositional phrase and one in which for John is a complementizer+subject:⁷

- (16) a. It would be impossible for John [to read that book] -- he simply wouldn't understand the technical terms
- b. It would be impossible [for John to read that book] -- it'll be in the bindery for the next six months

In (16a), the impossibility is connected with John, as the context illustrates -- the book is perfectly accessible and readable in general. In (16b), on the other hand, John's reading the book is impossible for reasons beyond his control -- it is the entire event that is impossible. Now, note that if we apply Tough-movement to a sentence like (15), only the reading corresponding to (16a) is obtainable:

- (17) a. That book would be impossible for John to read -- he simply wouldn't understand the technical terms
- b. *That book would be impossible for John to read -- it'll be in the bindery for the next six months

That is, the sentence that is derived by moving that book across the embedded subject is impossible. It seems clear, then, that some sort of subject-crossing constraint must be placed on Tough-movement, blocking application of the rule when the embedded sentence contains a subject.⁸ I assume that the subject of the embedded sentence is deleted by some sort of Equi rule under corefe-

rence to the noun phrase in the matrix dative. It is therefore necessary that this deletion rule precede Tough-movement in all derivations.

The structural description for Tough-movement, then, is

- (18) [_S[_{NP}[_S^V X NP Y]] Adj for NP]⁹

The noun phrase in the embedded sentence is made the subject of the adjective, with the rest of the embedded sentence being extraposed to the right of the matrix predicate. This should be taken as a rough indication of where we start and where we end up. The actual mechanics of the rule (or, conceivably, rules) involved remain mysterious. What is crucial is that the embedded sentence have no subject at the time Tough-movement applies, as established above, and that the rule be stated so as to move any NP to the right of V in the embedded clause, however deeply embedded this NP may be. While some general restrictions on the nature of the noun phrase being moved are necessary (e.g. that it must be definite), the fact that the rule must be stated with an essential variable (cf. the sentences of (7)) means that it is impossible to constrain any noun phrase that can show up in the predicate of the embedded sentence from being Tough-moved by manipulations of the S.D. itself. Yet, as will be seen below, there are several construction types from which noun phrases cannot be **extracted** by this rule.

It is necessary at this point to interject the following warning: the sentences to be discussed below reflect the facts for a particular dialect only -- the distribution of stars indicated will be wrong for many speakers. The dialect under consideration is not a regional, social, sexual, or otherwise extralinguistically definable one, but it is a real one, and, I believe, not a minority one. The fact of dialect (or perhaps idiolect) variation regarding these sentences is an interesting question in itself, but it is not the question I will be concerned with here, nor have I done any work toward delineating specific dialects with respect to the data in question. I am concerned simply with the facts of one particular dialect, and with how they may be accounted for. People who find that some (or most, or all) of the sentences I have starred are perfectly acceptable should regard the data as they would data from some unknown language, and take on faith that there really are people who speak (or, more appropriately, don't speak) this way.

The first cases to consider are the following:

- (19) a. It is impossible to buy presents for John
 b. Presents are impossible to buy for John
 c. John is impossible to buy presents for
 (20) a. It is impossible to buy John presents
 b. *Presents are impossible to buy John
 c. *John is impossible to buy presents

The sentences in (19a) and (20a) presumably have the same underlying

structure, the difference between the two sentences being that Dative Movement has applied in (20a) but not (19a). (19b) shows that it is possible to Tough-move the direct object of a dative construction, and (19c) shows that the indirect object of such a construction may also be moved. But once Dative has applied to the embedded sentence, we find that neither the (old) direct object (20b) nor the (old) indirect object (20c) is movable. It seems then that some restriction is needed, as follows:

- (21) Tough-movement may not move any noun phrase which has been 'displaced' by prior application of Dative Movement

Consider next sentences such as

- (22) a. It is difficult to talk to Mary about such things
 b. Mary is difficult to talk to about such things
 c. Such things are difficult to talk to Mary about
 (23) a. It is difficult to talk about such things to Mary
 b. *Mary is difficult to talk about such things to
 c. *Such things are difficult to talk about to Mary

Postal (1971) has proposed a rule of About-movement which derives sentences like (24b) from structures like those of (24a):

- (24) a. I talked to Mary about those things
 b. I talked about those things to Mary

Thus, sentences (22a) and (23a) are presumably derived from the same underlying structure, the difference being that About-movement has applied in the derivation of (23a) but not (22a). We see from (22b) that the dative noun phrase of such a construction is Tough-movable, and from (22c) that the object of about is also movable. However, once About-movement has applied in the embedded sentence, we find that neither noun phrase can subsequently be moved by Tough-movement. Thus, some restriction is needed:

- (25) Tough-movement may not move any noun phrase which has been 'displaced' by prior application of About-Movement

Consider next cases like the following:

- (26) a. It is unpleasant to be kicked by John
 b. *John is unpleasant to be kicked by
 (27) a. It is easy to be accepted by that group
 b. *That group is easy to be accepted by

In sentences (26a) and (27a), Passive has applied in the embedded sentences. We see from (26b) and (27b) that an agent that has been moved into a by-phrase by Passive cannot be Tough-moved. Since there can be no general restriction on Tough-moving the object of the preposition by (cf. (6e)), it seems that some special restriction is needed to block sentences like (26b) and (27b), e.g.

- (28) If Passive has applied in the embedded sentence of an adjective that triggers Tough-movement, Tough-movement may not subsequently move the noun phrase that has been made the object of by

Finally, consider sentences like the following:

- (29) a. It is impossible to expect John to understand that book
 b. *John is impossible to expect to understand that book
 (30) a. It is difficult to believe John to have made such a mistake
 b. *John is difficult to believe to have made such a mistake

In the structures underlying (29a) and (30a), John originated as the subject of the object complement of expect and believe, respectively. Raising into object position made John the derived object of expect in (29a) and believe in (30a). We see from (29b) and (30b), that such a Raised object cannot subsequently undergo Tough-movement, i.e. that some restriction is needed:

- (31) Tough-movement may not apply to any noun phrase that has been Raised into object position

We have, then, four rather different constraints on Tough-movement, preventing Tough-movement from applying to noun phrases that have been 'affected' by Dative Movement (21), About-movement (25), Passive (28), and Raising into object position (31). Taking these together, however, the generalization emerges that Tough-movement may not move any noun phrase that has been previously moved by any other transformation¹⁰, or, otherwise stated, that Tough-movement may move a noun phrase only from its position in underlying structure.

If this is correct, we must then consider how to build such a restriction into the grammar. One possibility would be to say that Tough-movement is a pre-cyclical rule. If it were, it would follow automatically that noun phrases could only be Tough-moved from their position in underlying structure. However, there are several reasons for rejecting this approach:

First, as indicated above, Tough-movement must be stated so as to apply only when the embedded clause lacks a subject. The subject of the embedded clause is deleted by Equi under coreference to the noun phrase in the matrix for-phrase. Since Tough-movement must follow this Equi rule, it follows that if Tough-movement is precyclical Equi must also be precyclical. However, there are arguments that show that Equi cannot be precyclical, specifically, the existence of sentences like

- (32) a. It was hard for Mary to be accepted by that group
 b. It was unpleasant for Mary to appear to have been made a fool of

For Mary in the sentences of (32) can be shown to be a matrix dative (see Berman (ms) for tests for this). In both cases, it has triggered deletion of a derived subject -- in (32a), the derived subject of a passivized sentence, in (32b), the derived subject of a sentence that has undergone Raising into subject position. Since Equi must therefore follow both Passive and Raising, and since both of these latter rules can be shown to be cyclic, Equi must also be cyclic. Therefore, Tough-movement must be cyclic (or possibly postcyclic).

Second, the fact of the dialect variation mentioned above argues against Tough-movement being a precyclic rule. Many people accept some or all of the starred sentences of (19)-(30): for these speakers, Tough-movement cannot be precyclic. It would seem very strange for grammars to differ in that a specific rule is precyclic for some speakers, but cyclic for others.

Third, there is the fact that while there are well-established cases of rules that must be cyclic, and rules that must be postcyclic, there are no other well-established cases of precyclic rules. Taken alone, this would not be sufficient reason to reject the claim that Tough-movement is precyclic, but together with the reasons given above, it also argues against any such approach.

Finally, various languages other than English also have the rule of Tough-movement, and in at least one of these (Portuguese -- cf. Perlmutter (ms)), it can be shown that Tough-movement must be a cyclical rule. Other things being equal, it would be preferable to say that Tough-movement is cyclical in all languages that have it.

It seems, then, that the constraint against Tough-moving previously moved noun phrases cannot be accounted for by rule ordering, and some other approach is necessary. Since the information relevant to the constraint cannot be structurally present in the phrase-markers to which Tough-movement applies, it appears that the constraint must be global.

To conclude with a note on global rules: Globality is somewhat of a loaded term in linguistics these days; the acceptability and/or desirability of global rules in a grammar has become an ideological issue for many. However, facts must be faced, and if the constraint described here is correct, it means that some way of encoding it must be built into the grammar. Whether this means allowing rules to actually 'look back' at previous phrase-markers in a derivation (i.e. allowing well-formedness conditions to obtain between non-adjacent phrase-markers in a derivation), or whether it means allowing various coding devices to be left in trees as a result of transformations, or whether some other yet-to-be-formulated device is to be chosen, seems to me an open question -- all of the above are 'global' solutions in the relevant sense.

Footnotes

¹In both of these works, a somewhat different underlying structure was proposed -- specifically, it was assumed that any for-NP in a sentence like (1) was the complementizer+subject of the embedded clause, rather than a matrix dative, as in (2). This change is motivated below.

²Bresnan (1971) proposes a variant of such a structure, in which the matrix subject begins as a which which is replaced by some NP in the embedded VP. The structure given in (3) is proposed in Lasnik and Fiengo (ms), who propose a rule of Object Deletion to handle sentences like (1), as well as constructions like those of

- i. Mary is pretty to look at
- ii. This cake is too good/good enough to eat

However, it can be shown quite convincingly that sentences like (1) differ markedly from the constructions illustrated above (which, moreover, are markedly different from each other). Therefore, the desirability of handling the three types of constructions with a single rule seems questionable. Cf. Berman (ms) for evidence of these differences.

³Speakers differ considerably in which idioms they allow to undergo Tough-movement, with some idioms being impossible for almost everyone:

- i. *Advantage is easy to take of her
- ii. *Heed will be difficult to pay to the warning
- iii. *Recourse is easy to have to illegal methods

The sentences of (4) are taken from Kisseberth (ms), and in the case of 'verbal' idioms like these, there seems to be a high degree of correlation between those idioms which allow Tough-movement and those whose nouns can function as head nouns in relative clauses:

- iv. *The advantage that he took of her was scurrilous
- v. *The heed that we paid to the warning didn't help a bit
- vi. *The recourse that we had to illegal methods really paid off
- vs.vii. The headway that I made on my thesis pleased my advisor
- viii. The impression that he made on us was favorable
- ix. The allowances that we made for him were totally wasted

This suggests that the susceptibility of a given idiom to Tough-movement is not totally unpredictable, since it should be explained by the same mechanism (unfortunately, an unknown one) that accounts for relative clauses like those above. There is an independently needed restriction on Tough-movement (first noticed in Postal (1971)) to the effect that the Tough-moved NP must be, in some sense, definite. It may be that definiteness (again, a total mystery) is, in some way, involved in differentiating idioms like those in (4) and

those in (i)-(iii), and that the ill-formedness of the latter is to be correlated with the non-existence of sentences like

x. *A man is easy for Mary to please

xi. *A book is hard to read

⁴ Note that speakers who accept the sentences of (4) do not accept such sentences as

i. *Headway is too hard to make in cases like this

ii. *A good impression is easy enough to make

iii. *Allowances are too easy to make for the very young

iv. *The ice was too hard to break at first (only literal)

This is one indication that too and enough constructions are different from Tough-movement constructions.

⁵ Stanley Peters has pointed out the following sentence to me:

i. The Titanic is impossible for any iceberg to sink

in which not only is any iceberg not animate, but where it seems clear that it is a subject and not a dative. I find (i) unacceptable, as do many other people, but there are also a large number of people who accept it. For these speakers, the subject-crossing constraint (this term is due to Perlmutter (ms), who argues that the same constraint exists in Portuguese) must be weakened. However, even people who accept (i) find the sentences in (11) and (14) below impossible, and the Tough-moved version of (15) to be unambiguously interpreted as in (17a). Thus, strong restrictions on when a subject can be crossed are necessary even for speakers who do not have an 'absolute' subject-crossing constraint. I have only recently become aware of sentences like (i), and have not had time to try to figure out what is going on in these dialects.

⁶ Most predicates of this type do not allow the dative NP and the complementizer+subject NP to both appear on the surface if they are coreferential. Thus, although (12) is good, the following is not:

i. *For him to go to that school is difficult for John

ii. *It is difficult for John for him to go to that school

Good is one of the few such predicates that allow coreferential NP's on the surface, as in (13). For some predicates, coreference is required (i.e. sentences like (12) are impossible), and only one for-phrase is permitted on the surface (for many people, easy is one such).

⁷ Actually, the two readings of (15) are normally distinguished by intonation, as first noticed in Postal (1971). Syntactic tests for the structural difference indicated in (16a) and (16b) are given in Berman (ms).

⁸ There is an additional restriction on Tough-movement which blocks movement out of tensed clauses, cp.

- i. It is impossible to believe John to have stolen that book
- ii. That book is impossible to believe John to have stolen
- iii. It is impossible to believe that John stole that book
- iv. *That book is impossible to believe that John stole

It is (distantly) possible that some extension of the subject-crossing constraint can be used to rule out (iv).

⁹ Cf. Berman (ms) for arguments that all Tough-movement sentences, including those with no surface dative, have a for-phrase in underlying structure.

¹⁰ One exception to this is sentences like the following:

- i. John is impossible to consider a fool
- cp. ii. *John is impossible to consider to be a fool

Such sentences were first brought to my attention by Michael Szamosi, and are discussed at some length in Postal (ms). I have no explanation for them.

References

- Berman, A. (ms) Adjectives and Adjective Complement Constructions in English. Doctoral dissertation, Harvard University.
- Berman, A. and M. Szamosi (1972) Observations on Sentential Stress. *Language*, 48.2.
- Bresnan, J. (1971) Sentence Stress and Syntactic Transformations. *Language*, 47.2.
- Kisseberth, C. (ms) Does Tough-movement Exist?
- Lasnik, H. and R. Fiengo (ms) Complement Object Deletion.
- Perlmutter, D. (ms) Object-Raising in Portuguese.
- Postal, P. (1971) Cross-over Phenomena. New York: Holt, Rinehart, and Winston, Inc.
- Postal, P. (ms) On Raising.
- Rosenbaum, P. (1967) The Grammar of English Predicate Complement Constructions. Cambridge, Massachusetts: The MIT Press.