

A Constraint-based Approach to Tough Constructions

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1. Introduction

This paper deals with the so called *tough* construction of English and Korean. This construction is peculiar in that it manifests a dependency involving gaps between argument positions (A-positions, hereafter). The usual kind of dependency involving gaps is between a-position and non-argument positions (\bar{A} -positions, henceforth), but the tough construction relates A-position fillers and \bar{A} -position gaps. This would be problematic if a movement approach is conceived of as a description mechanism of the tough construction since movement usually relates two positions one of which lacks CASE. The tough construction, however, shows a dependency between two CASE-assignable positions.

2. Previous Studies

In this section, a few previous studies on the tough construction is reviewed and their merits and demerits will be assessed. This summary review includes a context-free formalism analysis given by Gazdar, Klein, Pullum, and Sag (GKPS, henceforth), one in IPSP formalism by Chae (1992), and a semantically oriented one by Kim (1996).

2.1. GKPS (1985)

One of the first attempts to describe the tough construction is GKPS (1985: 150). GKPS, employing a context-free grammar formalism, give a detailed analysis of the construction in question. Adjectives such as *easy*, *difficult*, *impossible*, *tough*, etc are seen as subcategorized for a VP containing a non-nominal NP gap, as shown in the ID rule shown in (1)

(1) ID Rule $A1 \rightarrow H[42], V2[INF]/NP[-NOM]$

This ID rule and a few grammatical mechanisms such as Head Feature convention (HFC), Control Agreement Principle (CAP), Foot Feature Principle (FFP) accounts for the following examples shown in (2) and (3). The feature [-NOM] is intended to preclude the possibility of extracting subjects such as

(3b).

- (2) a. John is easy to please.
b. John is easy for us to please.
c. John is easy for us to make Sandy accept.
- (3) a. Mary is hard to believe for me to believe John kissed.
b. *Mary is hard to believe kissed John

However, CAP in GKPS requires an absolute identity between the feature specifications of the subject and those of the missing object. This results in feature clashes between the AGR value that is basically the feature specifications of the subject and SLASH feature value which is passed up from the object gap. Thus, it is almost evident that there arise a case clash since the subject and the object in the tough construction have different case values.

2.2. Chae (1992)

H.-R. Chae (1992), employing a Indexed Phrase Structure Grammar formalism, deals with a more extensive data and phenomena involving unbounded dependencies between different kinds of 'triggers' and 'targets'. He introduces a kind of 'top' feature that percolates upward from a lexical trigger and introduces a gapped daughter node. His analysis extends to 'too/enough' construction as well as ordinary tough constructions. Although his analysis deals with a more comprehensive data, it does not include a detailed account of feature specifications of the subject and the missing constituent, either.

2.3 Kim (1989, 1996)

Kim (1989) attempts to resolve the case clash by loosening the CAP in the form of HFC so that the CAP requires identity of feature specifications up to the point where other grammar mechanisms allow them to be free. Thus, the two feature specifications of the subject and the missing object converge up to those specifications which are not regulated by other component of grammar such as FCRs (cf. FCR 13: [FIN, AGR NP] \supset {AGR NP[NOM]})

Kim (1996) deals with some semantic aspects of the tough construction in order to look into the semantic properties of the thematic roles of the arguments of the tough adjectives in question. Especially he attempts to account

for some ill-formed sentences as shown in (4) through (7)

- (4) a. *John is easy for that picture to frighten ____.
 b. John is easy for Mary to show that picture to ____.
 c. *John is easy for that picture to be shown to ____ by Mary
- (5) a. *This park would be easy for there to be a riot in ____.
 b. *John would be easy for it to be obvious that Bill likes ____.
- (6) a. ?*This guy is impossible to expect ____ to understand this novel.
 b. ?*Mary is difficult to believe ____ to have passed the exam.
 c. ?*The gentleman is hard for us to believe ____ to be honest.
- (7) a. *This book is hard for Bill to be sent ____ by Alice.
 b. *The prize was hard for John to be given ____.
 c. *John is unpleasant to be kissed by _____. (Chae 1992)
 cf. It is unpleasant to be kissed by John.

In order to resolve the problems in the above examples, Kim employs a neo-Davidsonian approach. It is claimed that in order to account for the patterns shown in (4) through (7) the Theta roles of the tough adjective arguments should contain at least SOURCE(or STIMULUS), EXPERIENCER, RELEVANT EVENT and that there should be a kind of control relation among the arguments as can be expressed as in (8)

- (8) $\lambda e[\text{TOUGH}'(e) \ \& \ \text{STML}(x_i, e) \ \& \ \text{EXP}(x_j, e) \ \& \ \text{RLVNT}(\lambda e'[\text{e}'(\text{V}') \ \& \ \text{T1}(x_j, e') \ \& \ \text{T2}(x_{j+1}, e') \ \dots \ \& \ \text{T1}(x_i, e') \ \dots], e)]$

By setting up this kind of argument schema for the tough adjectives we can say that (4a) is semantically inconceivable because 'that picture', being inanimate, cannot be an experiencer. (5a) and (5b) are also deviant semantically since pleonastic elements are filling the experiencer role position. The data in (6) are all anomalous because the experiencer role should be 'co-referential with' the thematic role of embedded clause which is not most prominent, so *expect*-type verbs cannot displace the raised object in the tough construction since it is semantically prominent. Sentences in (7) may be

pragmatically infelicitous since the experiencer of hardship or any other experiencer would usually be the agent-like role bearer instead of other inactive role bearer like recipient or goal in the embedded situation types as in (7a).

We can also explain why the three different readings with (9a) are reduced to one with (9b)

- (9) a. It is dangerous for children to bring in chemicals.
b. Chemicals are dangerous for children to bring _____ in

This is because there is a control relation between experiencer role and the corresponding role in the embedded clause assumed by the experiencing entity. The thematic role frame in (8) also explains why (10a) and (10c) are acceptable while (10b) is not.

- (10) a. It is unpleasant for Mary for John to go out with Sandy.
b. *Sandy is unpleasant for Mary for John to go out with _____.
c. Sandy is unpleasant for John to go out with _____.

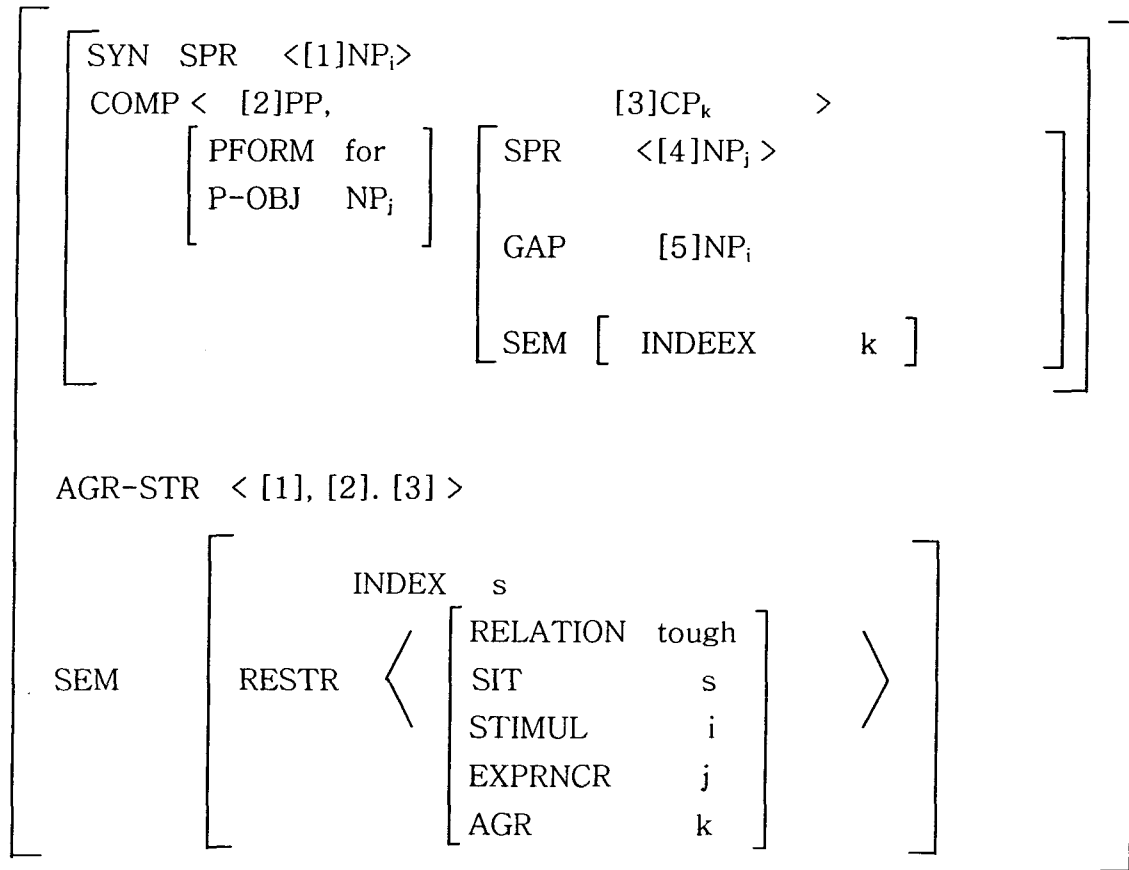
(10b) is ruled out by the schema in (8) since the schema requires identity between experiencer role bearer and the entity having the most salient thematic roles in the embedded clause. As can be seen in (10b), there are two distinct role bearers involved and there is no effect of control in (10b).

3. A Constraint-based Approach

In this section, a constraint-based analysis of the tough construction will be presented with an HPSG framework of Sag and Wasow (1999) being used as the description tool.

The syntax and semantics of the tough construction will be presented below that will capture the discussions made above, except for too-enough constructions. As for the syntax of this construction, a lexical specification as shown in (11) will guarantee the gap below the embedded VP and a tough subject in the main clause. The semantic properties of the construction discussed above can also be captured on the condition that we should be able to specify the CP as shown in (11) in order to capture the control relation between the experiencer role bearer and the logical subject to the CP.

(11) lexical entry for the lexeme *tough*



It is very difficult to assign role names to arguments in an HPSG style, so I opted to employ the usual convention. Basically I follow Jacobson (1992) and capture a control relation between the experiencer and the logical subject of the embedded CP.

4. Tough Constructions in Korean

Korean also has a construction similar to English tough constructions, but it is difficult to identify the construction in question since the Korean counterpart shows various word order variations and particle alternations as shown in (12) and (13)

- (12) **ku san cengsang-i** wuli-ka yeki-se poki-ka pyenhata.
 the mount. peak-nom We-nom here see-nom easy
 ‘The mountain peak is easy for us to see from here’

- (13) a. wuli-ka yeki-se **ku san cengsang-ul** poki-ka pyenhata.
 We-nom here the mount. peak-acc see-nom easy
 ‘It is easy for us to see the mountain peak from here’
- b. **ku san cengsang-i** wuli-ka yeki-se poki-ka pyenhata.
 the mount. peak-nom We-nom here see-nom easy
 ‘The mountain peak is easy for us to see from here’
- c. wuli-ka yeki-se **ku san cengsang-i** poki-ka pyenhata.
 We-nom here the mount. peak-nom see-nom easy
 ‘It is the mountain peak that is easy for us to see from here’
- d. wuli-nun **yeki-ka** **ku san cengsang-i** poki-ka pyenhata.
 We-top here-nom the mount. peak-nom see-nom easy
 ‘It is from here that the mountain peak is easy for us to see’
- e. ?wuli-ka **yeki-ka** **ku san cengsang-i** poki-ka pyenhata.
 We-mon here-nom the mount. peak-nom see-nom easy
 ‘It is for us and from here that the mountain peak is easy to see’

We will turn to (12) later. (13a) looks like a sentential subject construction as its English translation is intended to capture; (13b) looks more similar to the tough construction but the word order variations and particle alternations shown in (13c), (13d) and (13e) complicate the situation. What looks plausible in the paradigm shown in (13) is that sentential subject may allow nominative particle to mark every phrase within its domain.

This situation is more complicate since the particle attached to the sentential subject itself shows alternation as shown in (14)

14. A: Ku san cengsang-i wuli-ka yeki-se **oluki-ey** pyenhal keya.
 the mount. Peak-nom we-nom here climbing-in easy look-as-if
 ‘It looks as if the mountain peak is easy for us to climb from here’
- B: Anya, yeki-se **kwukyenghaki-ka** penhaci **oluki-nun** elyewul keya.
 No here seeing-nom easy climb-top hard look-as-if
 ‘No, it just looks easy to see from here, but will be hard to climb’

The utterance (14A) seems to contain a bona fide *tough* construction, but as the utterance (14B) shows, the particle *-ey* can also show alternation depending on the discourse context. Part of (14B) can be rephrased as in (15)

15. Anya, (ku san cengsang-*i* wuli-ka) yeki-se **kwukyenghaki-ka** penhaci
 no the mount. Peak-nom we-nom here seeing-nom easy
 ‘No, it is just to see it that is easy for us to do with the mountain peak’

This situation resembles a discourse situation where *-ka/-I* marks not the subject but a focused discourse phrase as shown in (16)

16. A: salam-tul-i Seoul-ey te moyesse, Inchon-ey te moyesse
 people-nom in more gathered-Q in more gathered-Q
 Did (more) people gather in Seoul or in Inchon?

- B: Seoul-i (salamtul-i) te moyessci
 ‘It is in Seoul that more people gathered’

So identifying the *tough* construction is not as simple as checking whether the logical object of the embedded VP is marked with nominative particle or not. This process of identifying a *tough* construction is beyond the scope of this paper, but we will treat (14A) as one of the main forms of the *tough* construction since it is impossible to attach accusative marker to the logical object in this case as shown in (17).

17. a. Ku san cengsang-*i* wuli-ka yeki-se **oluki-ey** pyenhal keya (=14A)
 the mount. Peak-nom we-nom here climbing-in easy look-as-if
 ‘It looks as if the mountain peak is easy for us to climb from here’
- b. *Ku san cengsang-**ul** wuli-ka yeki-se **oluki-ey** pyenhal keya
 the mount. Peak-acc we-nom here climbing-in easy look-as-if
 ‘It looks as if the mountain peak is easy for us to climb from here’
- c. * wuli-ka yeki-se ku san cengsang-**ul** **oluki-ey** pyenhal keya
 we-nom here the mount. peak-acc climbing-in easy look-as-if
 ‘It looks as if the mountain peak is easy for us to climb from here’

The paradigm shown in (17) contrasts considerably with the one shown in (13) in that the latter allows accusative particle to mark the embedded clause object.

Korean tough constructions, however, seem to have slightly less semantic restriction than its English counterpart. For example, the Korean language does not have semantically null expressions such as *there* or *it*. Thus, there does not arise a case such as the one shown in (5). So, the example shown in (18) does not seem to manifest any characteristics of the tough construction in Korean

- (18) Ku tosi-nun temo-ka ilenaki-ka/?*ey swipta.
 The city-top demonstration-nom occur-nom esay
 ‘It is (very) likely that a demonstration will break out in that city’

In (18) we cannot think semantically of a STIMUL (stimulus) or EXPRNCR (experiencer) which is typical to tough constructions. Thus, we may take (18) to be a sentential subject construction.

Let us consider some more examples resembling the ones in (4) through (7).

- (19) a. ?*John-i ku sajin-i nolakeyhaki-ka/-ey swipta
 J,-nom the picture-nom surprise-nom easy
 ‘John is easy for the picture to surprise.
 b. *John-i Mary-eyuyhae ku PD-ka sokay patki-ka swupta.
 U.-nom M.-by nom be-introduced easy
 ‘John is easy to be introduced to the producer by Mary’
 cf. Ku PD-ka Mary-eyuihae John-ul sokay patki-ka swupta.
 ‘It is easy for the producer to meet John through Mary’

We seem to see the same pattern (19) as we did in the English data presented in (5) through (7). Thus, we may temporarily conclude that there is no fundamental difference between the Korean and English tough constructions.

5. Conclusions

This paper has not dealt with a large set of data that can be dubbed as a ‘*too-enough* construction’. This construction is somewhat different from the

tough construction since its subject is optionally related to missing constituent of the embedded VP or S as shown in (20).

- (20) a. John is too nice to tease ____.
b. John is too nice to tease his younger brother.

Furthermore the dependency between the trigger and target is non-local, as Chae (1992) expounded, and thus the syntactic mechanism that will generate the strings in (20) should be different from the *tough* construction rules. The semantic specification of the *too-enough* construction seems to be simpler than the *tough* construction semantics since the former seems to need a degree adjective or adverb. The details of the syntax of the semantics of *too-enough* construction are beyond the scope of this presentation and may need another paper.

References

- Chae, H.-R. (1992) *Lexically Triggered Unbounded Discontinuities in English: An Indexed Phrase Structure Grammar Approach*, PhD dissertation, Ohio State University.
- _____. (1998) A Comparative Analysis of Tough and Comparative Constructions in English and Korean *Language Research* vol. 34 no. 1: 33-71.
- Dowty, D. (1991) "Thematic Proto-roles and Argument Selection" *Language* 67, 547-619
- Gazdar, G., E. Klein, G. Pullum, and I. Sag (1985) *Generalized Phrase Structure Grammar*, Blackwell.
- Kim, Y.-B. (1989) "Feature Clashes in GPSG," in Fee, E. J. and K. Hunt (eds.) *WCCFL* 8, pp457-470, CSLI.
- _____. (1996) "On Role-sharing Structures in English", *Korean Journal of Linguistics*, vol 21 No. 3, pp741-768.
- Jacobson, Pauline (1992) "The Lexical Entailment Theory of Control and the Tough-Construction", in *Lexical Matters*, CLSI, Stanford University.
- Sag, I. and T. Wasow (1999) *Syntactic Theory: A Formal Introduction*, CSLI.