

A New Approach to Intervention Effect

-Category: Formal Semantics

This paper proposes a new analysis of Intervention Effect. Intervention Effect is named for phenomena that a wh-interrogative sentence cannot be accepted to be felicitous when it is put in a specific order accompanying some classified constituents. These constituents which are thought to trigger intervention effect are called interveners, which are generally thought to be focused items (Beck and Kim, 1997; Beck 2006; Kim 2006; Wee 2007). This is interesting because if a wh-phrase appears with non-interveners in Korean, scrambling of any word, whether it is a wh-phrase or a canonical DP, is possible and does not seem to affect the felicity of a sentence as shown in (1). In contrast to this, the word order between a wh-phrase and an ‘only’-phrase crucially affects the felicity of a sentence as in (2a) and (2b). This phenomenon is well summarized through the contrast between the simple structures in (3).

- (1)(a) Minswu-ka mwues-ul mek-ess-ni?
 Minsu-Nom what-Acc eat-Past-Q?
 (b) mwues-ul Minswu-ka mek-ess-ni?
 What-Acc Minsu-Nom eat-Past-Q?
 ‘What did Minsu eat?’
- (2)(a)*Minswu-**man** mwues-ul mek-ess-ni?
 Minsu-**only** **what**-Acc eat-Past-Q?
 (b) **mwues**-ul Minswu-**man** mek-ess-ni?
 What-Acc Minsu-**only** eat-Past-Q?
 ‘What did only Minsu eat?’
- (3)(a)*[Q [...Intervener ...[...Wh...]]]
 (b)[Q [...Wh...]...Intervener...]

The idea that this intervention effect proves a constraint in LF movements was prevalent in 80s and until mid 90s (Huang 1982). However, since mid 90s (Beck and Kim 1997), the idea that intervention effect is due to crash in interpretation caused by a focused components interfering binding of Q-operator and a wh-phrase becomes popular. In more detail, for a wh-phrase to be interpreted properly, it needs to be bound by Q-operator since a wh-phrase, like a focus phrase, cannot be interpreted in an ordinary value. However, in (2a), before Q-operator meets a wh-phrase, it meets the focused ‘only’-phrase first and a wh-phrase remains uninterpreted (Beck and Kim 1997, Beck 2006, Kim 2002, 2006, Wee 2007).

However, I point out that the so-called interveners cannot be generalized simply as focus phrases or quantified components since it is not that all kinds of focus phrases or quantifiers behaves consistently as an intervener (It has also been noted by Beck 2006). Previous approaches have missed the point what kind of properties the interveners share. The intervener items in Korean are the constituents attached by *-man* ‘only’, *-cocha* ‘even’, *-kkaci* ‘even’, NPIs such as *amwuto* ‘anyone’ and etc. In this presentation, I will propose that the interveners induce the existence of universal quantifier in common either in their at-issue proposition or in their presuppositional proposition. This universal quantifier from interveners interacts with an existential quantifier, the correspondence of a wh-phrase in the framework of a set theory of question meaning (Hamblin 1973, Karttunen 1977). The following example (4) expresses the meaning of a question, ‘What did Yeona eat?’ in Hamblin’s framework and (5) expresses the logically translated meaning of ‘Only Yeona eat pizza’.

- (4) ‘What did Yeona eat?’ = {p| $\exists x[p=\lambda w. \text{eat}_w(\text{Yeona}, x)]$ }
 = {Yeona ate Pulgogi, Yeona ate tofu, Yeona ate a sandwich, ...}
 (5) ‘Only Yeona ate pizza’
 a. preajacent: $p=\lambda w.[\text{EAT}_w(\text{YEONA})(\text{PIZZA})]$

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b. presupposition: $\lambda w. [\forall y \in \text{ALT}(\text{YEONA})[\text{EAT}_w(y)(\text{PIZZA}) \rightarrow y = \text{YEONA}]]$

Now we convert the constant component, 'pizza', to a variable, x , to form the question meaning of 'What did only Yeona eat?' as follows.

- (6) a. $\{p: \exists x \in g(C) [p = \lambda w. \text{EAT}_w(\text{YEONA})(x)] \ \& \ \exists x \in g(C) [p = \lambda w. \forall y \in \text{ALT}(\text{YEONA})[\text{EAT}(y)(x) \rightarrow y = \text{YEONA}]]]\}$
b. $\{p: \exists x \in g(C) [p = \lambda w. \text{EAT}_w(\text{YEONA})(x)] \ \& \ \forall y \in \text{ALT}(\text{YEONA}) [p = \lambda w. \exists x \in g(C) [\text{EAT}(y)(x) \rightarrow y = \text{YEONA}]]]\}$

This interaction between two quantifiers theoretically generates two possible question meanings as in (18a) and (18b). The preajcent proposition includes only a single variable and does not make a difference from the ordinary question meaning in (3). What causes two possible question meanings is the presupposition proposition induced by 'only'. Here I extract only the presupposition part of 'only' in forming a question meaning.

- (7) a. $\exists x \in g(C) [p = \lambda w. \forall y \in \text{ALT}(\text{YEONA})[\text{EAT}(y)(x) \rightarrow y = \text{YEONA}]]$
b. $\forall y \in \text{ALT}(\text{YEONA}) [p = \lambda w. \exists x \in g(C) [\text{EAT}(y)(x) \rightarrow y = \text{YEONA}]]$

Since the presupposition contains a universal quantifier, when it enters the wh-question interpretation process, it contains two variables; one is an existential variable x , the correspondence of a wh-phrase, and the other is the universal quantifier. However, the second question meaning (18b) is uninterpretable contradicting to the existential presupposition of a wh-question. In the context where there is no action of 'eating something' by the alternatives of 'Yeona' in (7b), the question 'what is it that no action of eating has occurred?' cannot be appropriately used. I propose that Intervention Effect occurs because the 'intervener + wh-phrase' word order, which is alleged to induce Intervention Effect, allows this interaction between universal and existential quantifier possible and includes this crashed meaning of a wh-question.

This approach solves another main problem in the existing analyses of intervention effect. The constraint on LF movement leads the wh-in-situ sentence following an intervener to be 'ungrammatical' in a syntactic sense. 'To be ungrammatical' in a syntactic sense is different from 'to be infelicitous' in a pragmatic sense or 'to be uninterpretable' in a semantic sense. Despite of abundant controversies, it has been generally thought that the judgment regarding syntactic grammaticality should be clearer than other judgments based on the semantic or pragmatic infelicity. However, as Tomioka (2007) points out, the judgments in intervention effect area is too messy compared to other syntactic grammaticality judgment data. The variability among native speakers on the judgments turned out to be vast. This judgment variability problem can be better explained in the proposal in this paper than in the syntactic approach.

Selected References

- Beck, Sigrid. 1996. Quantified structures as barriers for LF movement. *Natural Language Semantics* 4:1-56.
- Beck, Sigrid. 2006. Intervention effects follow from focus interpretation. *Natural Language Semantics* 14:1-56.
- Beck, Sigrid and Shin-Sook Kim. 1997. On Wh-and operator scope in Korean" *Journal of East Asian Linguistics* 6:339-384
- Chierchia, Gennaro. 1992. Questions with quantifiers. *Natural Language Semantics* 1:181--234.
- Kim, Shin-Sook. 2002. Intervention effects are focus effects. In *Japanese/Korean Linguistics*, ed. Noriko Akatsuka and Susan Strauss, volume 10, 615--628. Stanford: CSLI.