

## Experimentally Investigating Intervention Effects in Adult, Child and Heritage Korean

Jiyoung Choi and Hamida Demirdache (Université de Nantes)

The goal of this paper is twofold. (i) provide novel experimental evidence for Intervention Effects (IEs) in *wh*-in-situ argument questions (triggered by an NPI intervener) in Korean; (ii) assuming that *the absence of IEs is a diagnostic for the occurrence of covert wh-movement* (Beck 2006, Kotek 2014 & references therein), experimentally probe – across adult, child, and Heritage speakers of Korean – the question of whether *wh*-in-situ undergoes covert movement. The Issue. Korean is a *wh*-in-situ language, where a *wh*-phrase can optionally undergo scrambling in both positive and negative interrogatives. An example of an object *wh*-phrase scrambled vs. in-situ in negative contexts is given in (1). Crucially, when a focus-sensitive operator (e.g. the NPI *amwuto* ‘anyone’) precedes an in-situ *wh*-phrase, then the *wh*-phrase must obligatorily be scrambled over the NPI intervener, as shown in (2).

- |     |    |                                  |                 |        |             |                         |                 |
|-----|----|----------------------------------|-----------------|--------|-------------|-------------------------|-----------------|
| (1) | a. | Sue-ka                           | <b>mwues-ul</b> | sa-ci  | anh-ass-ni? |                         |                 |
|     |    | Sue-NOM                          | what-ACC        | buy-CI | NEG-PAST-Q  | <b>SOV</b> (canonical)  |                 |
|     | b. | <b>Mwues-ul</b>                  | Sue-ka          | sa-ci  | anh-ass-ni? |                         |                 |
|     |    | What-ACC                         | Sue-NOM         | buy-CI | NEG-PAST-Q  | <b>OSV</b> (scrambling) |                 |
|     |    | ‘What did not Sue buy?’          |                 |        |             |                         |                 |
| (2) | a. | ?* <b>Amwuto</b>                 | mwues-ul        | sa-ci  | anh-ass-ni? |                         |                 |
|     |    | anyone                           | what-ACC        | buy-CI | NEG-PAST-Q  | <b>SOV</b> (in situ)    |                 |
|     |    | Intended: ‘What did no one buy?’ |                 |        |             |                         | (S. Kim (2002)) |
|     | b. | Mwues-ul                         | <b>amwuto</b>   | sa-ci  | anh-ass-ni? |                         |                 |
|     |    | What-ACC                         | anyone          | buy-CI | NEG-PAST-Q  | <b>OSV</b> (scrambling) |                 |
|     |    | ‘What did no one buy?’           |                 |        |             |                         |                 |

The sentence (2a) where the *wh*-phrase remains in-situ is unacceptable on a *wh*-interrogative reading since the NPI *amwuto* ‘anyone’ induces an IE, i.e., it blocks the LF movement of the in-situ *wh*-phrase. (2a) is therefore acceptable only on a yes/no-interrogative reading (‘*Did no one buy something?*’) where the *wh*-phrase is interpreted as existential (cf. Beck & Kim (1997), Kim (2002)).

**Theoretical premises.** Following Beck (2006), Kotek (2014) & references therein, we assume that there are 2 alternative strategies for interpreting *wh*-in-situ: Covert Movement (CM) vs. Focus-Alternative (FA) computation. Crucially, IEs only affect *wh*-phrases interpreted through FA – *the absence of IEs is a diagnostic for the occurrence of covert wh-movement* since the latter voids IEs.

**Experimental design & findings.** We designed a novel experimental task to investigate the sensitivity to IEs across three populations: adult L1 vs. child L1 vs. Heritage speakers of Korean. An original production task (i.e. an interpretation verification task) was conducted with 25 monolingual children (aged 5;1-7;1, MA=6;7), 27 adults as a control group and 10 French-dominant Heritage speakers of Korean (aged 13;5-16;0, MA=14;2). 4 experimental conditions were constructed in a 2 x 2 design with word order (SOV/OSV) and question type (Question without/with an NPI intervener) as factors. Participants were provided contexts licensing both *wh*- and yes/no-question interpretations and were asked to answer a SOV vs. OSV negative question. A question with an NPI intervener in SOV/OSV orders is given in (3).

(3) Question with an NPI intervener in SOV vs. OSV orders

a. Context: *Minsu and Juno do not like to eat vegetables. But, today, mother said that they have to eat carrots and broccoli that she prepared for lunch. Minsu is an amenable child, and he tried to eat the vegetables. He ate only carrots up, but he could not eat broccoli. However, Juno really hates vegetables, so he did not eat any vegetables.*

b. Target items: ***in-situ* WH (SOV)**

<b>Amwuto</b>	siktak-eyse	<b>mwuess-ul</b>	mek-ci	anh-ass-eyo?
Anyone	table-LOC	what-ACC	eat-CI	NEG-PAST-Q

?\*‘What did no one eat?’ / ‘Did no one eat something at the table?’

Expected answer: No (yes/no-answer), Juno ate carrots. /\*Broccoli (DP-answer)

**scrambled WH (OSV)**

**Mwues-ul** siktak-eyse **amwuto** mek-ci anh-ass-eyo?

What-ACC table-at anyone eat-CI NEG-PAST-Q

‘What did no one eat at the table?’ / \*‘Did no one eat something at the table?’

Expected answer: Broccoli (DP-answer)

Predictions for each experimental condition are given in Table 1 below.

		Word order	
		<i>in-situ</i> WH (SOV)	scrambled WH (OSV)
Question(Q) type	Q without an NPI intervener	DP-answer (1a)	DP-answer (1b)
	Q with an NPI intervener	yes/no-answer (2a)	DP-answer (2b)

The experimental results (%) are illustrated in Table 2.

	Q without an NPI intervener				Q with an NPI intervener			
	SOV ( <i>in-situ</i> WH)		OSV (scrambled WH)		SOV ( <i>in-situ</i> WH)		OSV (scrambled WH)	
	DP- answer	yes/no- answer	DP- answer	yes/no- answer	DP- answer	yes/no- answer	DP- answer	yes/no- answer
Adults	100	0	99	0	45,8	54,2	99	1
Children	100	0	100	0	42	58	95	5
HKS	100	0	100	0	85	15	100	0

Let us consider the results obtained in the condition of question with an NPI intervener, which is our crucial condition. In this condition, both children and adults showed the expected behavior with respect to the scrambled WH (OSV), volunteering DP-answers (99% for adults and 95% for children). As for the *in-situ* WH (SOV), they showed slightly higher levels of production for yes/no-answers (54.2% for adults and 58% for children). They significantly distinguished between scrambled WH (OSV) and *in-situ* WH (SOV) with respect to the production of DP-answers ( $t(23) = -5.858, p < .001$  for adults;  $t(24) = -7.025, p < .001$  for children), suggesting that they are sensitive to IEs triggered by the NPI intervener for the object *in-situ* wh-phrase. However, unacceptability of the question with an NPI intervener on a wh-question reading was not as strong as one might expect since both adults and children also volunteered DP-answers (45.8% for adults and 42% for children) in this condition.

As for Heritage Korean speakers (HKS), 9 out of 10 speakers were not sensitive to IEs triggered by the NPI intervener for the object *in-situ* wh-phrase, systematically volunteering DP-answers (85%). They did not significantly distinguish between the scrambled WH (OSV) with respect to the production of DP-answers ( $t(9) = -1.500, p = .168$ ). The remaining HKS who had the highest proficiency scores in Korean (95/100) showed an L1 pattern of behavior since she systematically volunteered yes/no-answers on this condition.

**Discussion.** Recall our theoretical premises: there are 2 alternative strategies for interpreting wh-*in-situ*: Covert Movement (CM) vs. Focus-Alternative (FA) computation. Crucially, the lack of IEs is a diagnostic for covert wh-movement. These assumptions lead us to conclude that HKS (except for the one who showed the expected pattern of IEs) systematically use CM strategy to interpret wh-*in-situ* since they have no IEs. We cannot however conclude from this pattern of responses that heritage knowledge is not native-like (is different from that of native speakers) since the variability that we found in the L1 results was not across items/answers, but across subjects. That is, native (adult and child) speakers systematically show either of two patterns of behavior: (i) 55.6% of adults and 56% of children use the FA strategy to interpret wh-*in-situ* since they have IEs (75-100% y/n-answers); (ii) 40.7% of adults and 32% of children use the CM strategy to interpret wh-*in-situ* since they have no IEs (75-100% DP-answers). We take this to show that both movement and non-movement strategies for interpreting wh-*in-situ* are available in L1 Korean.