Focus Matters: Two Types of Intervention Effect
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1 Introduction

- There are two intervention constraints which are proposed independently: (i) Beck’s (1996) *Minimal Quantified Structure Constraint* on LF movement of *wh*-in-situ elements\(^1\) and (ii) Linebarger’s (1987) *Immediate Scope Constraint* on negative polarity item (NPI) licensing.
- Both types of intervention constraint postulate that no LF dependency may cross a quantificational barrier.
- I point out some problems with both analyses and try to identify a natural class of expressions which show the intervention effects in both cases across different languages.

2 LF Intervention Effects on *Wh*-in-situ

2.1 German – Beck 1996

(1) Wen hat Karl wo gesehen?
    whom has Karl where seen
    ‘Where did Karl see whom?’

(2) a. *Wer hat niemanden wo angetroffen?
    who has nobody where met
    ‘Who didn’t meet anybody where?’

   b. Wer hat wo niemanden angetroffen?
      who has where nobody met
      ‘Who didn’t meet anybody where?’

(3) a. *Wen hat fast jeder wo getroffen?
    whom has almost everyone where met
    ‘Who did almost everyone meet where?’

   b. *Wen hat nur Karl wo getroffen?
      whom has only Karl where met
      ‘Who did only Karl meet where?’

\(^1\) Beck’s (1996) intervention constraint applies not only to *wh*-in-situ elements, but also to the stranded restriction of the overtly moved *wh*-phrases and *wh*-scope marking constructions. In this paper, however, I will only concentrate on *wh*-in-situ cases.
c. *Wen hat sogar Karl wo getroffen?
   whom has even Karl where met
   ‘Who did even Karl meet where’

- An intervening quantifier blocks LF wh-movement.

(4) $\ldots [\ldots X_i \ldots [QP \ldots [\ldots t_i^{LF} \ldots \ldots]]]$

(5) a. Quantifier-Induced Barrier (QUIB)
The first node that dominates a quantifier, its restriction, and its nuclear scope is a Quantifier-Induced Barrier.

b. Minimal Quantified Structure Constraint (MQSC)
If an LF trace $\beta$ is dominated by a QUIB $\alpha$, then the binder of $\beta$ must also be dominated by $\alpha$.

(6) a. $[\text{CP} \text{wer}_i \text{wo}_j [\text{IP} t_i [\text{VP} \text{niemanden} t_j^{LF} \text{angetroffen hat}]]]$
   (LF for (2-a))

b. $[\text{CP} \text{wer}_i \text{wo}_j [\text{IP} t_i [\text{VP} t_j^{LF} [\text{VP} \text{niemanden} t_j \text{angetroffen hat}]]]]$
   (LF for (2-b))

2.2 Korean – Beck & Kim 1997

(7) a. Suna-ka mwues-ul sa-ss-ni?
   Suna-NOM what-ACC buy-PAST-Q

b. mwues-ul, Suna-ka t, sa-ss-ni?
   what-ACC Suna-NOM buy-PAST-Q
   ‘What did Suna buy?’

(8) a. *amwuto mwues-ul sa-ci anh-ass-ni?
   anyone what-ACC buy-COMP not do-PAST-Q

b. mwues-ul, amwuto t, sa-ci anh-ass-ni?
   what-ACC anyone buy-COMP not do-PAST-Q
   ‘What did no one buy?’

(9) a. *Minsu-man nwukwu-lul manna-ss-ni?
   Minsu-only who-ACC meet-PAST-Q

b. nwukwu-lul, Minsu-man t, manna-ss-ni?
   who-ACC Minsu-only meet-PAST-Q
   ‘Who did only Minsu meet?’

(10) a. *Minsu-to nwukwu-lul manna-ss-ni?
    Minsu-also who-ACC meet-PAST-Q

b. nwukwu-lul, Minsu-to t, manna-ss-ni?
    who-ACC Minsu-also meet-PAST-Q
    ‘Who did Minsu, too, meet?”
In Korean, too, quantifiers seem to block LF \textit{wh}-movement.

2.3 Intervention Effects Crosslinguistically


3 Another Intervention Effect: NPI Licensing

3.1 English

(12) Nobody gave John/*most people a red cent.

(13) \textit{Immediate Scope Constraint} (Linebarger 1987)
A negative polarity item is acceptable in a sentence S if in the LF of S the subformula representing the NPI is in the immediate scope of the negation operator. An operator is in the immediate scope of NOT only if (i) it occurs in a proposition that is the entire scope of NOT, and (ii) within this proposition there are no logical elements intervening between it and NOT.

3.2 German

(14) weil niemand für Otto einen Finger gerührt hat
because nobody for Otto a finger lifted has
‘because nobody lifted a finger for Otto’

(15) a. ?*weil niemand nur für Otto einen Finger gerührt hat
because nobody only for Otto a finger lifted has
b. weil nur für Otto niemand t einen Finger gerührt hat
because only for Otto nobody a finger lifted has
‘because nobody lifted a finger only for Otto’

(16) a. weil niemand den Hans je eingeladen hat
because nobody the Hans ever invited has
‘because nobody ever invited Hans’
b. *Weil niemand **jeden** je eingeladen hat
because nobody everyone ever invited has
‘because nobody ever invited everybody’

4 A Unified Analysis?

- Both the Minimal Quantified Structure Constraint (MQSC) and the Immediate Scope Constraint (ISC) postulate that no LF dependency may cross a quantificational barrier.

- Is it possible to give a unified analysis of these two intervention effects?

- And more importantly, why should this kind of intervention constraint hold?

5 Some Problems with the MQSC and the ISC

- The data from various languages suggest that both constraints, as they stand, are too strong in the sense that not every quantifier shows the intervention effect.

- There is some crosslinguistic variation among the interveners. For example, universal quantifiers or negation are interveners in German, but do not show any intervention effects in Chinese (cf. Huang 1982a and Aoun & Li 1993a,b). And quantifiers like *most NP* or *always/often* do not show intervention effects for the licensing of *wh*-in-situ and NPI in Korean and Malayalam.

Chinese

(17) **meige ren** dou mai-le shenme?2
every man all buy-ASP what
‘What did everybody buy?’

(18) Zhangsan **changchang** mai shenme?
Zhangsan often buy what
‘What does Zhangsan often buy?’

(19) Zhangsan **bu** xiang mai shenme?
Zhangsan not want buy what
‘What doesn’t Zhangsan want to buy?’

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2 According to Aoun & Li (1993a), (17) is ambiguous. Both a pair-list answer and a single answer are allowed. This implies that the Chinese universal quantifier meigeren (unlike German universal quantifier jeder or Japanese daremo ‘everyone’) does not exhibit an intervention effect.
(20) a. `?lian Lili ye kan de dong na-ben shu?
   even Lili also read DE understand which-CL book
b. na-ben shu lian Lili ye kan de dong?
   which-CL book even Lili also read DE understand
   `Which book could even Lili understand?'

(21) a. ?*zhiyou Lili kan-le na-ben shu?
   only Lili read-ASP which-CL book
b. na-ben shu zhiyou Lili kan-le?
   which-CL book only Lili read-ASP
   `Which book did only Lili read?'

(22) a. *shei ye kan bu dong na-ben shu?
   who also read not understand which-CL book
b. na-ben shu shei ye kan bu dong?
   which-CL book who also read not understand
   `Which book could no one understand?'
   (shei ye ‘who also’ meaning anyone)

(23) *shi Zhangsan da-le shei?
   FM Zhangsan beat-ASP who
   `*Who is it Zhangsan that beat t?’ (Huang 1982b)

Korean

(24) a. taypwupwun-uy haksayng-tul-i nwukwu-lul hoycang-ulo
   most-GEN student-PL-NOM who-ACC president-as
   chwuchenha-ess-ni?
   recommend-PAST-Q
   `Who did most students recommend as president?’

b. Minsu-nun hangsang/cacwu nwukwu-lul party-ey teyliko ka-ss-ni?
   Minsu-TOP always/often who-ACC party-to take-PAST-Q
   `Who did Minsu always/often take to the party?’

(25) amwuto kukos-ey cacwu an ka-ss-ta
   anyone that.place-to often NEG go-PAST-DEC
   `No one went there often.’

(26) a. amwuto i chayk-ul an ilk-ess-ta
   anyone this book-ACC NEG read-PAST-DEC
   `No one read this book.’

b. *amwuto i chayk-man an ilk-ess-ta
   anyone this book-only NEG read-PAST-DEC
   `No one read only this book.’
c. i **chayk-man awmuto t an ilk-ess-ta**
   this book-only anyone NEG read-PAST-DEC
   ‘Only this book is what no one read.’

Malayalam (M.T. Hany Babu, p.c.)

(27) Lili eetₐ pustakam-aanₒ waayicc-atₒ
   Lili which book-be read-NOMINALIZER
   ‘Which book did Lili read?’

(28) ellaawarum eetₐ pustakam-aanₒ waayicc-atₒ
   everyone which book-be read-NMZ
   ‘Which book did everyone read?’

(29) a. *Lili-yum eetₐ pustakam-aanₒ waayicc-atₒ
       Lili-also which book-be read-NMZ
   b. eetₐ pustakam-aanₒ Lili-yum waayicc-atₒ
      which book-be Lili-also read-NMZ
   ‘Which book did Lili, too, read?’

(30) a. *Lili-maatram eetₐ pustakam-aanₒ waayicc-atₒ
      Lili-only which book-be read-NMZ
   b. eetₐ pustakam-aanₒ Lili-maatram waayicc-atₒ
      which book-be Lili-only read-NMZ
   ‘Which book did only Lili read?’

(31) a. *aarum eetₐ pustakam-aanₒ waayikk-aa-te irunn-atₒ
      anyone which book-be read-NEG-AUG AUX-NMZ
   b. eetₐ pustakam-aanₒ aarum waayikk-aa-te irunn-atₒ
      which book-be anyone read-NEG-AUG AUX-NMZ
   ‘Which book did no one read?’
   \( (aar-um = aar \ ‘who’ + um \ ‘also’) \)

(32) a. *LILI-aanₒ eetₐ pustakam waangi-yatₒ
       LILI-be which book bought-NMZ
   b. eetₐ pustakam-aanₒ LILI waangi-yatₒ
      which book-be LILI bought-NMZ
   ‘Which book did LILI buy?’
   \( (\text{‘For which } x, x \text{ a book: it is LILI that bought } x.) \)

(33) aarum ellaaw pustakawum waayicc-itt-illa
    anyone all book read-PERF-NEG
    ‘No one read every book.’

(34) a. *aarum ii pustakam-maatram waayicc-itt-illa
    anyone this book-only read-PERF-NEG
    ‘No one read only this book.’
b. ii pustakam-maatram aarum t waayicc-itt-illa
this book-only anyone read-PERF-NEG
‘Only this book is what no one read.’

(35) a. *aarum ii pustakam-yum waayicc-itt-illa
anyone this book-also read-PERF-NEG
‘No one read also this book.’
b. ii pustakam-yum aarum t waayicc-itt-illa
this book-also anyone read-PERF-NEG

• The interveners for licensing of wh-in-situ elements in one language seem to be the same interveners which block licensing of NPIs in that language. This is manifest in languages like German, Korean and Malayalam. If this generalization holds, it suggests the need for a unified analysis of the two intervention phenomena.

• Faced with the overgeneralization problem, one question is whether it is possible to distinguish a natural class of the interveners which show intervention effects across different languages.

• Crosslinguistic data from Chinese, German, Korean and Malayalam seem to suggest that focus phrases generally inhibit the relation between the licensor (Q/NEG) and the licensee (wh-in-situ/NPI) in both constructions.

6 Proposal

6.1 Focus Intervention Effect

Both the licensing of wh-in-situ and NPI licensing are focus-sensitive and an intervening independent element with the feature [+Focus] blocks the licensing.

(36) Focus Intervention Effect
In a focus-sensitive licensing construction, no independent focus phrase may intervene between the licensor and the licensee.

Wh-in-situs and NPIs are dependent focus elements which have to be associated with a licensing operator in order to be interpreted.

6.2 Negation, Q-Operator, and Association with Focus

• Jackendoff (1972) proposes a general rule association with focus, which applies to negation, focus-sensitive particles (like only or even) and yes-no ques-
ations. There is a close connection between focus and the interpretation of these “focus-sensitive” expressions.

- In many languages, wh-phrases are marked with [+Focus] feature which is realized either morpho-syntactically or phonologically (or both). For Malayalam, Jayaseelan (2001) argues that the abstract question (Q-) operator (in the sense of Baker 1970) is a focus-sensitive disjunction operator and it applies to wh-in-situ by “association with focus” (Rooth 1985, 1992). The idea is that a wh-word (being a focus) introduces alternatives and the Q-operator operates on those alternatives. See Hong (1995) for a similar analysis. Ramchand (1997) and Shimoyama (1999) also extend Rooth’s “alternative semantics” to interpretation of wh-words in Bengali and Japanese respectively.

- According to recent analyses of NPIs (e.g., Lee & Horn 1994, Krifka 1995, Lahiri 1998), NPIs can be analyzed as focus phrases, supported by the fact that NPIs consist of an indefinite NP and an overt focus particle meaning “even, also” in many languages (cf. Haspelmath 1997). NPI licensing is also a case of focus-sensitive quantification.

- We could assume that both Q-operator and NEG are focus-sensitive operators which undergo association with focus. It is natural that the necessary licensing relationships are interrupted by another element with the same feature [+Foc], and this can be considered as an instance of the “defective intervention effect” of Chomsky (2000, 2001).

6.3 Focus Intervention Effect as Defective Intervention Effect


\[ \alpha > \beta > \gamma \]

(*AGREE (α, γ), β and γ are matching goals for the probe α, and β is inactive due to a prior AGREE with some other probe.)

Both the independent focus phrase and the licensee (wh-in-situ/NPI) match the probe of the licensor (Q/NEG), but the intervening [+Foc] feature of the already (independently) checked focus phrase bars licensing of the licensee.

6.3.1 Wh-In-Situ Licensing

(38) *[[CP Q_i [ FocP_[+Foc] [ . . . wh_i_[+Foc] . . . ]]]]
6.3.2 NPI Licensing

(40) *\[ NEG [ FocP[+Foc] \ldots NPI[+Foc] \ldots ]\]

(41) weil niemand nur für Otto einen Finger gerührt hat [German]  
because nobody only for Otto a finger lifted has  
‘because nobody lifted a finger only for Otto’

6.3.3 Multiple AGREE

- MULTIPLE AGREE for multiple wh-in-situs/NPIs: Intervention effects hold only  
if the intervening element is not rendered inactive by the same probe P (Chomsky 2001, see also Hiraiwa 2001 for MULTIPLE AGREE).

(42) [cp Q_{i,j} [ wh_{i[+Foc]} \ldots wh_{j[+Foc]} \ldots ]]

(43) Mira-nun eti-eyse nwukwu-lul manna-ss-ni? [Korean]  
Mira-TOP where-LOC who-ACC meet-PAST-Q  
‘Where did Mira meet whom?’

6.4 More Evidence for Focus Intervention – Alternative Questions

Han & Romero (2001): Alternative questions necessarily involve focus on each disjunct.

(44) Did John drink COFfee or TEA?  
a. (John drank) coffee.  
b. (John drank) tea.

The alternative question (44) has the same answer condition as the constituent question *What did John drink, coffee or tea?* (cf. Bäuerle 1979). An extra focus phrase c-commanding the disjunctive XP’s renders the sentence ungrammatical.
(45)  a. Hat Hans [ TEE oder KAFfee ] getrunken?  
    has Hans tea or coffee drunk  
    ‘Did Hans drink TEA or COFfee?’  
  b. *Hat nur/auch Hans [ TEE oder KAFfee ] getrunken?  
    has only/also Hans tea or coffee drunk  
    ‘Did only/also Hans drink TEA or COFfee?’  
  c. *Hat HANS [ TEE oder KAFfee ] getrunken?  
    has Hans tea or coffee drunk  
    ‘Did HANS drink TEA or COFfee?’  
  d. Hat [ MARIA oder HANS ] nur Harry Potter gelesen?  
    has Maria or Hans only Harry Potter read  
    ‘Did MARIA or HANS read only Harry Potter?’

Korean

(46)  a. Minsu-ka SUNA-lul chwuchenha-ess-ni (animyen) MIRA-lul  
    Minsu-NOM Suna-ACC recommend-PAST-Q (if not) Mira-ACC  
    chwuchenha-ess-ni?  
    recommend-PAST-Q  
    ‘Did Minsu recommend SUNA or MIRA?’  
  b. *Minsu-man/to SUNA-lul chwuchenha-ess-ni (animyen)  
    Minsu-only/also Suna-ACC recommend-PAST-Q (if not)  
    MIRA-lul chwuchenha-ess-ni?  
    MIRA-ACC recommend-PAST-Q  
    ‘Did only/also Minsu recommend SUNA or MIRA?’

(47) *[cp Q_i [ FocP_{[+Foc]} [ . . . [A or B]_{i[+Foc]} . . . ]]]

6.5 Extension to NPI Licensing in Korean

Some properties of Korean negation and NPIs (cf. Sells 2001)

- Two types of negation in Korean: Short-Form Negation (SFN) involving the preverbal negative adverb an ‘not’ and Long-Form Negation (LFN) with the negative verb anh-ta ‘not do’ taking a content verb as its complement.

- Syntactic licensing of Korean NPIs: The NPI should be “commanded” by a negative element, where command is essentially the clause-mate relation (see Langacker 1969).
• Even though SFN cannot take scope over a quantifier in the subject position ((48)), it can license an NPI in that position via command ((51-a)).

• A focus phrase on the “upwards” licensing path of SFN induces the intervention effect ((51-b)), i.e., *NPI > FocP > SFN. But this is the mirror image of Chomsky’s configuration (37), with the probe (NEG) c-commanded by its goals.

(48) manhun salam-tul-i Seoul-ey an ka-ss-ta (SFN)
many people-PL-NOM Seoul-to NEG go-PAST-DEC
a. There are many people who did not go to Seoul. (many > neg)
b. *It is not the case that many people went to Seoul. (*neg > many)

(49) manhun salam-tul-i Seoul-ey ka-ci anh-ass-ta (LFN)
many people-PL-NOM Seoul-to go-COMP NEG-PAST-DEC
a. There are many people who did not go to Seoul. (many > neg)
b. *It is not the case that many people went to Seoul. (?neg > many)

(50) LFN with the contrastive marker nun attached to VP:

[ VP manhun salam-tul-i Seoul-ey ka-ci ]-nun anh-ass-ta
many people-PL-NOM Seoul-to go-COMP-CM NEG-PAST-DEC

‘It is not the case that many people went to Seoul.’ (neg > many)

(51) a. amwuto i chayk-ul an ilk-ess-ta
 anyone this book-ACC NEG read-PAST-DEC
‘No one read this book.’
b. *amwuto i chayk-man an ilk-ess-ta
 anyone this book-only NEG read-PAST-DEC
‘No one read only this book.’
c. i chayk-man, amwuto t_i an ilk-ess-ta
 this book-only anyone NEG read-PAST-DEC
‘Only this book is what no one read.’

• Long-Form Negation with nun:

(52) a. [ VP amwuto i chayk-man ilk-ci ]-nun anh-ass-ta
 anyone this book-only read-COMP-CM NEG-PAST-DEC
‘It is not the case that anyone read only this book.’ (neg > anyone > only)
b. *[ VP i chayk-man, amwuto t_i ilk-ci ]-nun anh-ass-ta
 this book-only anyone read-COMP-CM NEG-PAST-DEC
‘It is not the case that only this book, anyone read.’ (neg > only > any)
7 Conclusion

- I have shown that not every quantifier shows the intervention effect and that there is some crosslinguistic variation among the interveners.

- But it seems that focus phrases quite generally induce an intervention effect on two different types of licensing (for wh-in-situ and NPI). I have argued that this can be explained if we assume that wh-in-situs and NPIs are focus elements which need a proper licensor in order to be interpreted, and that both the Q-operator and the negation operator are sensitive to focus for interpretation. An intervening focus phrase blocks the focus-sensitive licensing.

- The focus intervention effect can be considered as a case of the Defective Intervention Effect in the sense that a focus-sensitive probe cannot AGREE with its goal across a potential goal which carries the matching feature [+Foc].

- Remaining questions and problems: How to formalize this effect semantically? How to explain the intervention effects induced by other quantifiers? (see Honcoop’s 1998 dynamic semantic approach for a possible account)
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Two informational interventions (point-of-decision prompts to encourage stair use and community-wide campaigns) were effective, as were three behavioral and social interventions (school-based physical education, social support in community settings, and individually-adapted health behavior change) and one environmental and policy intervention (creation of or enhanced access to places for physical activity combined with informational outreach activities). Selection of Interventions for Review. The relationships between increased physical activity and health were assumed by the coordination team to be well established and, subsequently, were not the focus of the systematic review. Instead, the coordination team focused on interventions to increase physical activity behaviors. 2002 Focus matters: Two types of intervention effect. Paper Presented at WCCFL 21, Santa Cruz. Kishimoto, H. 1992 LF pied piping: Evidence from Sinhala. Gengo Kenkyu 102: 46–87. Kishimoto, H. 2005 Wh-in-situ and movement in Sinhala questions. A 2005 Focusing on the matter of topic: A study of wa and ga in Japanese. Journal of East Asian Linguistics 14: 1â€“58. Larson, B. 2011 A dilemma with accounts of right node raising. Linguistic Inquiry 43(1): 143-150. Larson, R.K. 1988 On the double object construction. (36) Focus Intervention Effect In a focus-sensitive licensing construction, no independent focus phrase may intervene between the licensor and the licensee. Wh-in-situs and NPIs are dependent focus elements which have to be associated with a licensing operator in order to be interpreted. 6.2 Negation, Q-Operator, and Association with Focus. â€œ Two types of negation in Korean: Short-Form Negation (SFN) involving the preverbal negative adverb anâ€œnotâ€™ and Long-Form Negation (LFN) with the negative verb anh-ta â€œnot doingâ€™ taking a content verb as its complement. â€œ Syntactic licensing of Korean NPIs: The NPI should be â€œcommandedâ€ by a negative element, where command is essentially the clause-mate relation (see Langacker 1969). Kim, Shin-Sook: 2002, â€œ Focus Matters: Two Types of Intervention Effectâ€™ paper presented at WCCFL 21, Santa Cruz. Angelika Kratzer (1991) â€œ Representation of Focusâ€™ A Stechow Particle von D. Wunderlich (Eds) Handbook of Semantics De Gruyter Berlin 825â€“834. Google Scholar. Hotze Rullmann Sigrid Beck (1998) â€œ Presupposition Projection and the Interpretation of Which-Questionsâ€™ D. Strolovich A. Lawson (Eds) Proceedings of SALT 8. CLC Ithaca, N.Y 215â€“232. Google Scholar. Sauerland, Uli and Fabian Heck: 2003, â€œ LF Intervention Effects in Pied-Pipingâ€™, in M. Kadowaki and S. Kawakara (eds.), Proceedings of NELS 33 , pp. 347â€“366. GLSA, University of Massachusetts and Amherst.