Intervention Effects: More Questions than Answers

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June 7, 2019, National University University of Singapore

Intervention Effects in Interrogatives: Basics

Generalization:

If a certain expression (intervener) c-commands a wh-phrase in the surface structure, the wh-phrase cannot take scope beyond the intervener.

(1) *[... C_{+wh} [..... [Intervener] ... [wh] ...]]

What expressions are interveners?

- Negative quantifiers, NPIs, *only* (exhaustive focus operator) are common interveners across languages.
- Universal quantifiers, disjunctions, other focus operators (e.g., *also*) can also be interveners in some languages.

(2) a. *Wer hat <u>niemanden</u> **wo**　　angetroffen? (German)
　　　　who　has nobody.acc where met
　　　　'Who has nobody meet where?'

　　　b. *<u>Amwuto</u> **nwukwu-lul** chotayha-ci ahn-ass-ni?　　(Korean)
　　　　anyone　　who-Acc　　invite-Comp not.do-Past-Q
　　　　'Who did nobody invite?'

　　　c. *<u>Daremo</u> **dare-o**　　yob-anak-atta-no? (Japanese)
　　　　anyone　　who-Acc call-Neg-Past-Q
　　　　'What did nobody invite?'

　　　d. *<u>Shei-ye</u> kan bu dong　　　　**na-ben shu**? (Chinese)
　　　　who-also read not understand which-CL　　book
　　　　'Which book did nobody understand?'

　　　e. *<u>Aarum</u> **eetə**　**pustakam-aanə** waayikk-aa-te irunn-atə? (Malayalam)
　　　　anyone　which book-be　　　　read-Neg-Aug Aux-Nmz
　　　　'Which book did nobody read?'

　　　f. *<u>Kimse</u> **nereye** git-me-di?　　(Turkish)
　　　　anyone where go-Neg-Past
　　　　'Where did nobody go?'

(3)   a. Wer hat **wo** <u>niemanden</u> angetroffen? (German)
      who has where nobody.acc met
      'Who has nobody meet where?'

   b. **Nwukwu-lul** <u>amwuto</u> chotayha-ci ahn-ass-ni?   (Korean)
      who-Acc   anyone invite-Comp not.do-Past-Q
      'Who did nobody invite?'

   c. **Dare-o** <u>daremo</u> yob-anak-atta-no? (Japanese)
      who-Acc anyone call-Neg-Past-Q
      'What did nobody invite?'

   d. **na-ben shu** <u>shei-ye</u> kan   bu   dong ?   (Chinese)
      which-CL <u>book</u> who-also read not   understand
      'Which book did nobody understand?'

   e. **Eetə pustakam-aanə** <u>aarum</u> waayikk-aa-te irunn-atə? (Malayalam)
      which book-be   anyone read-Neg-Aug Aux-Nmz
      'Which book did nobody read?'

   f. **Nereye** <u>kimse</u> git-me-di?   (Turkish)
      where   anyone go-Neg-Past
      'Where did nobody go?'

The IEs seem to be a well-defined problem, but they are more complex than they seem.

First and foremost...

> *How should interveners be defined?*

The most common interveners across languages are negative quantifiers and other downward entailing quantifiers (e.g., *few*, *less than N*), NPIs, and focused phrases with *only*. Apart from those, languages can differ. Universal quantifiers, disjunctive phrases, focused phrases with *also, even* are included in the intervener repertoires of many languages but not all.

Universalist Approach: Find an attribute that binds (at least) the most common interveners across languages and find the right label for that attribute.

- ‘Quantificational’ used to be the most commonly found characterization (Hoji 1985, Beck 1996, Beck and S-S. Kim 1997). It is successful in covering (almost) all the commonly found interveners. However, it has been known from the early days that not all quantifiers are interveners.

- ‘Focus sensitivity’ has become a popular alternative to ‘quantificational’ (S-S. Kim 2002, Beck 2006). It is not clear, however, how some interveners, such as negative quantifiers, can be regarded as focus sensitive.

- Cross-linguistic variability in interveners has been acknowledged, but so far no concrete proposals have been made within the Universalist doctrine (with one exception in Kotek 2019).

Language Specialist Approach: Find a precise definition of interveners in a given language (or a given group of languages).

- My own proposal (anti-topicality) in Tomioka (2007b) is one example of this approach. I was aware that such a criterion does not easily apply in other languages.

- Mayr's (2013) criterion, 'not scopally commutable with existential quantifiers', seems to work in German. His analysis specifically excludes existential quantifiers as potential interveners. However, existential quantifiers are interveners in some languages (e.g., Mandarin Chinese, Li and Law 2016).

- An obvious drawback: We end up with a collection of different criteria (and different analyses), possibly missing an important generalization across languages.

Weak vs. Strong Interveners

There is also an 'intra-language' variability that can cause trouble.

It has been acknowledged that some languages exhibit gradable strength of IEs: In Korean and Japanese, the universal quantifiers *nwuku-na*, *da're-mo*, are 'weak' interveners.

(4) a. $^{??}$Nwukuna-ka onu kyosu-lul chonkyongha-ni? (Korean)
everyone-Nom which professor-Acc respect-Q
'Which professor is such that everyone respects them?' (Beck and Kim 1997, (75a))

b. $^{??}$Da'remo-ga nani-o yon-da-no? (Japanese)
everyone-Nom what-Acc read-Past-Q
'What is it that everyone read it?' (Tomioka 2007, (2a))

(5) a. Onu kyosu-lul nwukuna-ka chonkyongha-ni? (Korean)
which professor-Acc everyone-Nom respect-Q
'Which professor is such that everyone respects them?' (Beck and Kim 1997, (75b))

b. Nani-o da'remo-ga yon-da-no? (Japanese)
what-Acc everyone-Nom read-Past-Q
'What is it that everyone read it?' (Tomioka 2007, (5a))

In Korean, -*man* 'only' is an intervener. While I haven't found any description that it is a weak intervener, its effects become much weaker if a -*man* phrase is a non-subject. For the NPI intervener, the weakening effect of non-subjects is minimal.

(6)   *Chelswu-man Sunhee-eykey nwuku-lul cwu-ess-ni?
       Chelswu-only   Sunhee-Dat   what-Acc give-Past-Q
       'What did only Chelswu give to Sunhee?'

(7)   a. Chelswu-nun Sunhee-eykey-man nwuku-lul cwu-ess-ni?
           Chelswu-Top Sunhee-Dat-only   what-acc give-past-Q
           'What did Chelswu give only to Sunhee?'

        b. *Chelswu-nun amwu-eykey-to   nwuku-lul cwu-ess-ni?
           Chelswu-Top   anyone-Dat-also what-Acc give-Past-Q
           'What did Chelswu give to nobody?'

Why does the weak/strong contrast problematic?

Which is the main target of explanation?

Scenario 1: There is a common explanation for both weak and strong intervention effects. Strong effects come about due to some additional factors that only apply to strong interveners.

The problems: Strong interveners are the most consistent interveners across languages. Weak interveners are not. For instance, the universal quantifier *mei(-ge)* in Mandarin Chinese is not an intervener. Another issue is how to make the relevant constraint or regulation for IEs 'weak'. If IEs are due to structural ill-formedness, for instance, wouldn't we expect the effects to be stronger?

Scenario 2: There is a common explanation for both weak and strong intervention effects. Weak effects come about due to some ameliorating factors that only apply to weak interveners.

We are just not used to this line of reasoning, especially when the explanation relies on a categorical factor ...

Scenario 3: The relevant explanation for intervention effects itself is gradable.

Scenario 4: There are different explanations for weak and strong intervention effects.
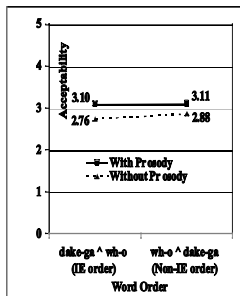
This is the approach that Kobayashi (2017) advocates. Although not based on the weak-strong distinction, Li and Law (2016) also endorse non-uniform explanations for intervention effects (based on Mandarin Chinese): Their distinction is between focus intervention and quantificational intervention.

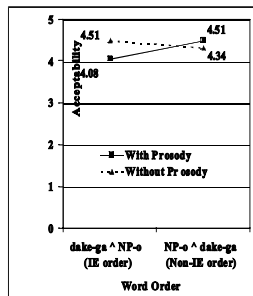I am more receptive to this approach than before:

From Kitagawa et al (2013): 51 undergraduate students of Nagoya University

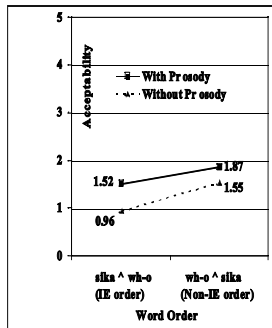Figure 4 Mean acceptability scores as a function of word order and prosody

Figure 5 Mean acceptability scores as a function of word order and prosody

a. *sika* in a *wh*-sentence:

b. *sika* in a declarative sentence:
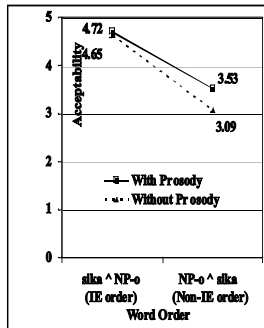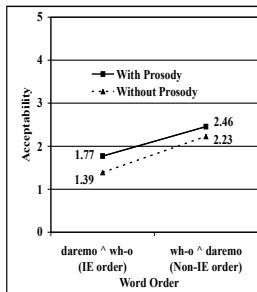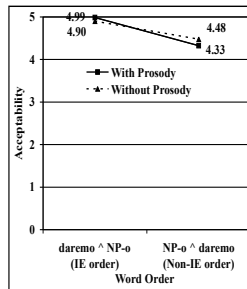
Figure 6   Mean acceptability scores as a function of word order and prosody

a.   *daremo* in a *wh*-sentence: b.   *daremo* in a *declarative* sentence:

Weak vs. Strong Interveners

Dake 'only'

- ▶ When the subject of a wh-question is a *dake*–phrase, the acceptability lowers.
- ▶ However, there is no significant improvement with scrambling, contrary to the judgment previously reported (Tomioka 2007a).
- ▶ The lack of improvement cannot be attributed to the negative effect of a non-canonical word order.
- ▶ Thus, at this point, there is no clear evidence that *dake* is an intervener.

NPI

- ▶ NPIs are interveners although the scrambled order is far from being 'totally grammatical'.
- ▶ The weakness of improvement is likely to be attributed to the negative effect of a non-canonical word order: Unlike *dake*, NPIs (that we tested) do not bear case markers, which makes the integration of the NPI interveners more difficult in a non-canonical word order.
- ▶ Still, it is not clear whether the better word order (= the scrambled word order) should be considered fully acceptable.

Kobayashi's (2017) analysis has some challenges as well. Many of the judgments reported in the paper are categorical., which does not always reflect my own assessment. More importantly, however, one of the key features of his proposal is empirically unsupported.

According to Kobayashi, existential quantifiers that are positive polarity items (e.g., *dare-ka* 'someone') are strong interveners – they elicit stronger effects and are not amenable in the kind of environment that I identified as a 'weakening' environment.

This characterization turned out to be far less conclusive, possibly incorrect: It is likely that *dareka* is not an intervener (either strong or weak).

Weak vs. Strong Interveners

These are the data we collected along with those reported in Kitagawa et al 2013, but the results of *dareka* were not included in the paper. (The same group of subjects: 51 undergraduates at Nagoya University.)

Table: Visual Only Stimuli

Word Order	Mean	SD
dareka-Nom who-Acc praised?	1.65	1.23
who-Acc *dareka*-Nom praised?	1.49	1.43

Table: Visual Only Stimuli

Word Order	Mean	SD
dareka-Nom who-Acc invited?	1.59	1.50
who-Acc *dareka*-Nom invited?	1.57	1.37

Table: Visual + Audio Stimuli

Word Order	Mean	SD
dareka-Nom who-Acc praised?	1.63	1.41
who-Acc *dareka*-Nom praised?	2.02	1.64

Table: Visual + Audio Stimuli

Word Order	Mean	SD
dareka-Nom who-Acc invited?	1.45	1.33
who-Acc *dareka*-Nom invited?	1.37	1.18

- What Kobayashi was right about: In the intervention structure (the *dareka*–wh order), the level of unacceptability is close to that of NPIs (approx. $1.5 \sim 1.6$ for *dareka* and $1.39 \sim 1.77$ for *daremo*).
- However, there is no improvement in the scrambled order, contrary to what has been reported.

One possible explanation: It has been claimed that *dareka* is an epistemic indefinite (Sudo 2010, Allonso-Ovalle and Shimoyama 2013). In addition to its usual existential meaning, the use of an epistemic indefinite gives rise to the ignorance meaning ($=$ the speaker does not know who the indefinite refers to). See Alonso-Ovalle and Menéndez-Benito (2003), Kratzer and Shimoyama (2017), Aloni and Port (2010) among others.

Can an epistemic indefinite be used in a constituent question?

(8) ??Welches Buch hat irgendjemand / irgendein Student gekauft?
    which   book has e.i.someone   / e.i.some student bought
    'Which book did someone (e.i.) / some (e.i.) student bought?'
    (Florian Schwarz, p.c.)

?? is my interpretation of his comment 'there is definitely something off with this'.

Weak vs. Strong Interveners

Interestingly, if an epistemic indefinite is in the object position, the sentence improves.

(9) a. Welche Studenten haben irgendwas   gekauft?
         which   students   have e.i.something bought
         'Which students bought something/anything?'

   b. Welche Buecher haben irgendjemandem gefallen?
         which   books   have e.i.someone   pleased
         'Which books did someone/anyone like?'

Indeed, my own judgment, (which you should not take too seriously at this point), matches up with this pattern, especially the epistemic indefinite is not accusative marked.

(10) a. Dare-ga   nanika($^?$-o)   mitsuketa-no?
         who-Nom e.i.something(-Acc) found-Q
         'Who found something?'

   b. $^?$Dare-ga dareka-ni   atta-no?
         who-Nom e.i.someone-Dat met-Q
         'Who met someone?'

In some languages, intervention effects vary based on linguistic environments. I argued that when the intervener is the matrix subject, it elicits the strongest effects in Japanese and Korean (inspired by Hagstrom's 1998 observation is that intervention effects are weaker within syntactic islands). We have seen a case of dative *only* in Korean.

Eilam (2011, Chapter 3) notes many instances of improvement when the context makes it clear that the relevant interveners are regarded as given. His examples include English (alternative questions), French (negative wh-in-situ question) and Chinese (with *only*).

Today's case study: *why*–questions in Japanese and Korean. According to Kuwabara (1996), Miyagawa (1998), and Ko (2005), intervention effects disappear in *why*–questions.

(11)   a. <u>Amwuto</u> **way** ku   chayk-ul   ilk-ci-anh-ass-ni?
                 Anyone   why that book-Acc read-CI-not-Past-Q
                 'Why did no one read that book?' (Ko 2005, (8a))

          b. <u>Taroo-sika</u> **naze** sono hon-o   yoma-nakat-ta no?
                 Taroo-only why that book-Acc read-not-Past Q
                 'Why did only Taroo read that book?' (Ko 2005, (9a), originally from Kuwabara 1996)

But calling it 'disappearance' is objectionable because the scrambled order is better still.

(12)   a.   **Way** <u>amwuto</u> ku   chayk-ul   ilk-ci-anh-ass-ni?
        why   anyone   that book-Acc read-CI-not-Past-Q
        'Why did no one read that book?' (Ko 2005, (8b))

     b.   **Naze** <u>Taroo-sika</u> sono hon-o   yoma-nakat-ta no?
        why   Taroo-only that book-Acc read-not-Past Q
        'Why did only Taroo read that book?' (Ko 2005, (9b), originally
        from Kuwabara 1996)

Apparently, one reviewer pointed this out, and Ko says in footnote 7: 'For my six informants, however, the contrast (between (8ab) and (9ab)) is rather weaker (or nonexistent) than the contrast between (2b) and (8a) (comment: Argument wh vs. why).' Incidentally, an example like (11b) is judged unacceptable in Tanaka (1997).

Strong vs. Weak Linguistic Environments

The decision on whether the contrast is categorical (good vs. bad) or gradable (better vs. worse) is an important one.

In a different experiment of Kitagawa, Tamaoka and Tomioka:

1. Comparing three sets of sentence patterns: (i) [Interv – wh$_{argument}$], (ii) [Interv – why], (iii) [why – Interv]

2. Judgment task (0-5 point scale). 58 undergraduate students at Hiroshima University, Japan.

3. Result
   3.1 Pattern (i): Mean 1.52, SD 1.43
   3.2 Pattern (ii): Mean 3.62, SD 1.13
   3.3 Pattern (iii): Mean 4.86, SD 0.36

4. The differences between (i) vs (ii) and (ii) vs (iii) were both statistically highly significant (both $p <$.001).

So, as far as the Japanese data are concerned, the distinction is weak–strong, rather than absence–presence of intervention effects.

In Tomioka (2009), I tried to explain the graded judgment in the following way:

- The non-Wh items in a constituent question must be backgrounded.
- In a '*why ϕ?*' question, the content of ϕ is presupposed.
- Thus, a pre-Wh intervener is more readily backgrounded in a why question than in other constituent questions.
- However, placing the intervener in the post focus reduction part of the sentence ($=$ after 'why') is still better.

There may be another factor that separates why-questions from other wh-questions.

Bromberger (1992): Unlike other wh-interrogative sentences, *why*-questions are focu-sensitive.

(13)   a. Why did JOHN buy beer? (A: Because he was the only one who had his ID)

        b. Why did John buy BEER? (A: Because it was on sale)

(14)   a. What did ANNA buy in Kyoto? (A: Shoes)

        b. What did Anna buy in KYOTO? (A: Shoes)

(15)   a. When did ANNA visit Kyoto? (A: Last month)

        b. When did Anna visit KYOTO? (A: Last month)

The way in which this focus sensitivity in Japanese and Korean is a bit unusual.

It is possible to employ a similar prosodic strategy.

(16)   a. NA'ze/NAN'de/DOU'shite Anna-wa   KYOU'to-de Mana-ni
           why/why/how.come   Anna-Top Kyoto-Loc   Mana-Dat
           atta-no?
           met-Q
           'Why did Anna meet Mana in KYOTO?'

       b. NA'ze/NAN'de/DOU'shite Anna-wa   MANA-ni Kyouto-de
           why/why/how.come   Anna-Top Mana-Dat Kyoto-Loc
           atta-no?
           met-Q
           'Why did Anna meet MANA in Kyoto?'

However, it is perhaps not the default method. What is more commonly found is to use adjacency (Kawamura 2007).

(17) a. Anna-wa   NA'ze/NAN'de/DOU'shite Kyouto-de Mana-ni
          Anna-Top why/why/how.come   Kyoto-Loc Mana-Dat
          atta-no?
          met-Q

          'Intended: Why did Anna meet Mana in KYOTO?'

     b. Anna-wa   NA'ze/NAN'de/DOU'shite Mana-ni   Kyouto-de
          Anna-Top why/why/how.come   Mana-Dat   Kyoto-Loc
          atta-no?
          met-Q

          'Intended: Why did Anna meet MANA in Kyoto?'

▶ The constituent that immediately follows the cause Wh is the focus associate.

▶ Strangely, the focus associate need not receive a focal accent. As a matter of fact, not assigning a focal accent is preferred (Tomioka 2017)

▶ The lack of focal accent is observed even with cases of *why stripping* (e.g., *NA'ze Kyoto-de nano?* 'Why in Kyoto?').

What happens with focus sensitive why-questions with interveners? For instance, how does one ask, 'Why did nobody buy souvenirs in KYOTO? (A: *Because they were told they could get them cheaper in Osaka.*)

(18)   a. NA'ze daremo KYO'to-de(-wa) omiyage-o   kaw-anak-atta-no?
            Why   anyone Kyoto-Loc(-Top) souvenir-Acc buy-Neg-Past-Q
            'Why did nobody buy souvenirs in KYOTO?'
      b. Daremo NA'ze Kyoto-de(-wa) omiyage-o kaw-anak-atta-no?
            Anyone why Kyoto-Loc(-Top) souvenir-Acc buy-Neg-Past-Q
            'Why did nobody buy souvenirs in KYOTO?'

Here, I myself can no longer tell which is better or worse.

In Japanese, the structural relation between an intervener and a wh-phrase is actually not that important! If an intervener follows a wh-phrase but receives a focal accent, the sentence is degraded again.

(19)   a. ^{???}**Dare-o** <u>daREMO</u> YOB-ANAk-atta-no?
        who-Acc anyone   call-Neg-Past-Q
        'What did NOBODY invite?'

      b. ^{???}**Dare-o** <u>NAOYA-ga</u> yon-da-no?
        who-Acc Naoya-Nom call-Past-Q
        'Who did NAOYA invite?'

The English translations of these sentences (with NOBODY/NAOYA focalized) sound reasonable. How does Japanese express these questions?Either a clefted question or a contrastive wa-marking.

(20) a. [daREMO YOB-ANAk-atta-no]-wa   dare-desu-ka?
          anyone   call-Neg-Past-Q-NML-Top who-copula-Q
          'Who is it that NOBODY invited?'

      b. [NAOYA-ga yon-da-no]-wa   dare-desu-ka?
          Naoya-Nom call-Past-Q-NML-Top who-copula-Q
          'Who is it that NAOYA invited?'

      c. NAOYA-wa dare-o   yon-da-no?
          Naoya-Nom who-Acc call-Past-Q
          'Who did NAOYA invite?'

As far as I can tell, Branan (2018) makes the same point for Korean. According to his constraint ranking:

(21)   a. $(_\phi$ wh-phrae Intervener ....)
       b. $(_\phi$ wh-phrae) $(_\phi$ Intervener ....)

(21a) outranks (21b) because the latter violates DEPHRASE. I assume that (21b) is the phonological phrasing when the intervener gets a focal accent. Unfortunately, I did not get consistent judgments on this from my Korean informants...

This re-emergence of intervention effects reminds us of the Italian fact noted by Rizzi (1997): a wh-phrase and a fronted focus are mutually incompatible <u>in either order</u>. Indeed, Bocci, Rizzi and Saito (2018, p.43) conclude that 'the source of the ban on focus-wh combination in Italian and that of intervention in Japanese/Korean are identical.'

Just to follow the general theme of today's presentation, the situation is a bit more complex:

(22)   a. ^{??}**Nani-o** <u>NAOya/-sae/-mo</u> tabe-ta-no?
        what-Acc <u>Naoya-even/-also</u> eart-Past-Q
        'What did (even) Naoya (also) eat?'

      b. ^(?)**Nani-o** <u>Naoya-SAE/-MO</u> tabe-ta-no?
        what-Acc <u>Naoya-even/-also</u> eat-Past-Q
        'What did (even) Naoya (also) eat?'

The general pattern: Between the two choices of focal accenting, the accent on the particle (rather than the NP itself) is more or less acceptable after the wh-phrase.

Italian may be considered a non-intervention language, as a focus phrase is banned in a wh-question, regardless of the relative c-command relation between the two.

The other type of non-intervention language is more straightforward: Even the most likely candidates for interveners (such as NPIs, negative quantifiers or *only*) can c-command wh-phrases at the surface level. Amharic (Eilam 2011) and Egyptian Arabic (Branan 2018) are two of such languages.

(23)   a. haile bəcca mən/yätənnaw-ən mäs'haf anäbbäb-ä?
              Haile only   what/which-Acc   book   read.PER-3MS
              'What/which book did only Haile read?'

        b. [?]mən/yätənnaw-ən mäs'haf haile bəcca anäbbäb-ä?
              what/which-Acc   book   Haile only   read.PER-3MS
              'What/which book did only Haile read?'

For a focus-based account, it means either

- ▶ Wh-phrases can QR/scramble over interveners at LF. Or
- ▶ The focus operator $\sim$ can be confined within the intervener (i.e., $\sim$ is not always a sentential/adverbial operator).

For a lambda-abstration account, it means either

- ▶ Wh-phrases can QR/scramble over interveners at LF. Or
- ▶ All quantifiers can reconstruct so that no lambda abstraction arises.

For an information structure account, it means that an intervener is backgroundable in a pre-wh position.

Both Eilam and Branan attribute the lack of intervention effects to the prosodic matters.

According to Eilam: In Amharic,

- A focus operator and its associate usually make up a prosodic phrase: (haile bəcca)$_\phi$ 'only Haile'
- In a wh-interrogative, however, the wh-phrase and the preceding focus phrase are phrased together: (haile bəcca mən mäs'haf)$_\phi$ 'only Haile what book'
- The insertion of a boundary after 'only' is not allowed: *((haile bəcca)$_\phi$ mən mäs'haf)$_\phi$
- In other words, a focused phrase like 'only Haile' loses its focus prosody in the intervention configuration, which makes the focus phrase easily backgroundable.

Branan's account of Egyptian Arabic:

- In Hellmuth (2013), it is shown that there is no dephrasing after focus (or post-focal reduction as a result of it) in Egyptian Arabic.
- In other words, there is not a clear phonetic realization of givenness.
- In Branan's account of intervention, the interaction of ALIGN constraints and dephrase. When dephrase does not apply, his account predicts that no intervention effects arise.

Interpreting Branan's points to my advantage, I could say that Egyptian Arabic has no privileged position within a sentence that is suitable for given materials, and that an intervener can be backgrounded anywhere in a sentence, including in a pre-wh position.

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