

# Focus Intervention in Declaratives<sup>\*</sup>

Aviad Eilam

University of Pennsylvania

## 1. Introduction

Early research into focus intervention effects, created by a certain class of operators preceding a *wh*-phrase in a *wh*-question or the disjunction of an alternative question, was dominated by syntactic (Kim 2005) and semantic analyses (Beck 2006). However, recent evidence suggests that the phenomenon is rooted in information structure (IS) (Tomioka 2007, Eilam 2010), reflecting failure to map a sentence onto a well-formed IS representation. This paper provides new data involving the same operators in declarative sentences, which strongly supports an IS explanation and has significant implications for theories of focus, as well as for questions regarding the place of IS in the grammar.

The phenomenon of focus intervention is illustrated in the *wh*-questions in (1)-(2), where an operator preceding the *wh*-phrase yields an unacceptable sentence. In (1) the operator is the Korean particle *man* 'only', and in (2) it is the negative polarity item (NPI) *daremo* 'anyone' in Japanese. *Man* and *daremo* are thus labeled intervention triggers.<sup>1</sup>

- (1) \*Minsu-man nuku-lul po-ass-ni?  
Minsu-only who-ACC see-PAST-Q  
'Who did only Minsu see?' (Beck 2006:3)
- (2) ?\*daremo nani-o yom-ana-katta-no?  
anyone what-ACC read-NEG-PAST-Q  
'What did no one read?' (Tomioka 2007:1571)

---

<sup>\*</sup> I first and foremost thank Tony Kroch for calling my attention to the novel data reported here. I am grateful to Dave Embick and Satoshi Tomioka for extended discussions, as well as Catherine Lai, Laia Mayol, Satoshi Nambu, Florian Schwarz, Yanyan Sui, and audiences at NELS 41 and WPSI 4.

<sup>1</sup> Here I discuss only elements which are crosslinguistically stable intervention triggers, that is, the operators corresponding to English *only*, *even*, and *also*, and NPIs (see Beck 2006). I label these *only*-type operators; the phrase consisting of the operator and its associate (*Minsu-man* 'only Minsu' in (1)) is the intervener.

In questions involving a disjunction, intervention effects are manifested in the lack of an alternative question reading, rather than degradedness (Beck & Kim 2006). Thus, in (3), the intervention trigger *only* preceding a disjunctive phrase leaves the question with just a yes/no interpretation, allowing it to be answered as in (b), but not (a).

- (3) Does only John like Mary or Susan?  
a. #Mary. [\*AltQ]  
b. Yes. [✓Yes/NoQ]

Until recently, the consensus was that these crosslinguistically robust patterns indicate syntactic ill-formedness (Beck 1996, Kim 2005, a.o.). Beck (2006), however, notes that all of the syntactic analyses fail to accurately define the set of intervention triggers, or make use of a definition which is ultimately semantic. Accordingly, she pursues a semantic approach to intervention. The basic idea is that focus-sensitive operators interfere with the semantic relation between the question operator and the *wh*-phrase or disjunction, because they take the place of the question operator in evaluating the alternatives introduced by the *wh*-phrase/disjunction. Although this idea overcomes the abovementioned weakness of syntactic analyses, Tomioka (2007) points out various observations which both it and the syntactic alternatives are unable to explain. These include a great deal of interspeaker variability in judgments, and the amelioration of intervention effects when the intervener is not a matrix subject.

Eilam (2010) adds further evidence against syntactic and semantic analyses, showing that they derive incorrect predictions. In particular, intervention effects may arise even when an intervener follows a *wh*-phrase or disjunction, and can be ameliorated or eliminated in certain contexts. If this were a syntactic or semantic phenomenon, it should only surface if the intervener c-commands the *wh*-phrase/disjunction and should be immune to contextual changes. These two observations strongly support Tomioka's IS analysis of focus intervention, which is developed further in Eilam (2010). According to this analysis, a phrase including an *only*-type operator is an intervener in *wh*-questions and alternative questions because there is no IS category with which it is compatible.

The goal of this paper is to corroborate the IS approach to intervention, by applying it to a set of data which has yet to be noted in the literature. That is, intervention effects are not limited to questions, but rather also arise in declarative sentences. The structure of the paper is as follows. Section 2 reviews the existing literature on intervention in questions, focusing on Beck's (2006) semantic theory and the IS theory of Eilam (2010). I show that the patterns found are consistent with the latter, rather than the former. In section 3 I introduce and analyze the novel data from declaratives, which bears not only on speaker judgments but also on truth conditions. I demonstrate that the IS theory developed for questions naturally extends to declaratives, while syntactic and semantic approaches to intervention are inadequate. Section 4 concludes the paper by assessing the implications of the findings for theories of focus association and for the conception of IS in the grammar.

## 2. Intervention Effects in Questions

As noted in section 1, the discussion of intervention effects in the literature has centered on questions until now, for which researchers have proposed syntactic, semantic, and IS explanations. A comprehensive review of this literature can be found in Eilam (2010); here I only highlight the primary types of approaches taken, in order to assess where we stand before moving on to the novel data from declaratives.

Recall that an *only*-type operator preceding a *wh*-phrase in a question yields degradedness (4a), and one preceding a disjunctive phrase eliminates the alternative reading of the question (5). The examples below also illustrate possible "repair" strategies, used to convey the meaning of the unacceptable intervention configurations: scrambling of the *wh*-phrase over the intervener in (4b) and clefting of the alternative question in (6).

- (4) a. \*Minsu-man nuku-lul po-ass-ni?  
Minsu-only who-ACC see-PAST-Q  
b. nuku-lul Minsu-man po-ass-ni?  
who-ACC Minsu-only see-PAST-Q  
'Who did only Minsu see?'
- (5) Does only John like Mary or Susan?  
a. #Mary. [\*AltQ]  
b. Yes. [✓Yes/NoQ]
- (6) Is it Mary or Susan that only John likes?  
Mary. [✓AltQ]

Focus intervention effects of this type were initially treated as syntactic in nature. Beck (1996), for example, argues that in situ *wh*-phrases are prohibited from covertly moving across interveners, while for Kim (2005), the obstructed relation between  $C^0$  and the *wh*-phrase does not involve movement but rather Agree. All of the syntactic analyses, however, suffer from a range of problems. First, they often assume that in situ *wh*-phrases undergo some type of movement; this assumption, however, is not adopted by much of the current work in syntactic theory (Reinhart 1998), and it is not clear how to extend a movement-based account to questions with a disjunction (Beck & Kim 2006). Second, it remains a mystery why the patterns observed differ from those triggered by other well-known syntactic constraints, such as islands: in the case at hand, only covert movement is proscribed. Third, as noted in the previous section, syntactic analyses either avoid defining the class of intervention triggers or provide a semantic definition.

Given these problems, Beck (2006) proposes a semantic theory of intervention in *wh*-questions. The key element in Beck's theory is the semantic notion of focus, i.e. the presence of alternatives in the semantics, which is a property common to interveners and

*wh*-phrases. In intervention configurations, the focus operator that comes with the intervention trigger applies to a complement containing a *wh*-phrase. If the latter were a regular focused phrase, this would reset the focus value of the *c*-commanding node to its ordinary semantic value, and the semantic computation would proceed along the tree. *Wh*-phrases, however, have no ordinary semantic value. Thus, the *c*-commanding node has an undefined value, which is ultimately inherited by the entire question, since the licensing question operator in  $C^0$  requires a focus semantic value as its argument. A structure with an undefined semantic value is uninterpretable, and hence, according to Beck, ungrammatical. Beck and Kim (2006) show that the same semantic account is applicable to alternative questions, where the element introducing alternatives is not a *wh*-phrase, but rather a disjunctive phrase. Yes/no readings are not affected because they do not involve alternatives at the relevant stage of the computation.

Beck's semantic approach to intervention effects seems preferable over syntactic alternatives to the extent that the property underlying the effects is indeed the semantic notion of focus. However, there exists another notion of focus—information structural focus—which, despite often coinciding with the semantic category in a given sentence, is not identical to semantic focus. It is thus crucial to consider whether this might be the type of focus relevant to intervention effects.

A brief excursus on the IS articulation of sentences is in order. IS focus is one of the three primitives making up the IS articulation of the sentence, along with the topic and tail, following Vallduví (1990).<sup>2</sup> The focus constitutes the informative part of the sentence, adding to or modifying the hearer's knowledge store. It is realized across many languages, if not universally, by obligatory intonational prominence. The topic points to the specific address in the hearer's knowledge store where the information contributed by the focus is to be entered. The tail signals how the information is to be entered under a given address, and necessarily lacks intonational prominence. This IS articulation is illustrated with the English example from Vallduví (1990) in (7), where *the boss* constitutes the topic, *hates* is the focus (whose prominence is marked by small caps), and *broccoli* is the tail. In this case, the hearer is instructed to go to the entry 'the boss' and substitute the new information 'hates' for V in the existing record 'The boss V broccoli'.

(7) The boss HATES broccoli. (Vallduví 1990:64)

Returning to the issue of different notions of focus, we find that a semantic focus involving an operator like *only* or *even* tends to also be the IS focus of the sentence it occurs in, but does not have to be (Vallduví 1990, Dryer 1994). The question, then, is what happens when an *only*-phrase, i.e. a potential intervener, is not the IS focus. If intervention effects persist, we can conclude that semantic focus is the underlying cause, while absence or amelioration of the effects indicates that the IS notion of focus is the relevant one. The findings, presented in Tomioka (2007) and Eilam (2010), are

---

<sup>2</sup> I replace Vallduví's "link" with the more widely known term "topic", because the category under discussion here, unlike a link, is not restricted to shifting topics or to sentence-initial position.

unequivocal: intervention effects are ameliorated or eliminated in contexts where the intervener is not the IS focus. One such example is provided in (8)-(9).

(8) Context: The graduate students in linguistics took two preliminary exams, in syntax and phonology, last week. The results were surprising: there was one exam that all the students, including John, passed, but only John passed the other.

(9) Did only John pass syntax or phonology? (Eilam 2009:243)

(10) \*Does only John like Mary or Susan?<sup>3</sup> (=3)

Crucially, (9) does not differ from (10) in its syntax or semantics, but rather only in its IS and concomitant prosody. The potential intervener *only John* is part of the backgrounded material—i.e. the tail—in (9) and hence does not bear prosodic prominence, enabling it to be accommodated in the alternative question and thus avoiding an intervention effect.

Having established that IS focus, rather than semantic focus, plays a role in intervention effects, the obvious question is why this is the case. In other words, what well-formedness condition(s) do intervention structures violate? The answer, originally given in Tomioka (2007) and elaborated on in Eilam (2010), is that an IS focus cannot be integrated in the IS articulation of *wh*-questions and alternative questions, which already has one such focus, namely, the *wh*-phrase or disjunctive phrase. Given that a sentence contains one and only one focus (Lambrecht 1994), any element outside the focus must be a topic or a tail. However, a phrase involving an *only*-type operator can be neither of the two. It cannot be a topic because it is non-referential (cf. Reinhart 1981), and it is incompatible with tailhood as long as it bears prosodic prominence (cf. Vallduví 1990). The resulting mismatch between the components of the sentence and the IS articulation derives judgments of degradedness, i.e. intervention effects. In order to express the intended meaning of the sentences under discussion, it is necessary to transform the potential intervener into a non-IS focus, and this is precisely what the various repair strategies noted above do. For example, scrambling as in (4b) places the intervener in the phonologically reduced domain which follows foci, including *wh*-phrases, allowing the intervener to function as (part of) the tail.

All in all, the case for an IS approach to intervention effects based on *wh*- and alternative questions, which is laid out in more detail in Eilam (2010), is rather strong. What would make the case even more compelling is data from environments other than questions. That is, if the ill-formedness of intervention configurations reflects basic constraints on the IS articulation of sentences, there is no reason to assume that intervention effects should be limited to questions. The next section provides novel data showing that they occur in declarative sentences, and argues that this data decisively adjudicates in favor of an IS analysis.

---

<sup>3</sup> '\*' indicates that the alternative question reading is unavailable.

### 3. Intervention Effects in Declaratives

Intervention effects in declaratives are illustrated in the answer to a question in (11b-c) and the corrective context in (12), where italics mark associates of *only* and small caps indicate the pitch accent on the IS focus.<sup>4</sup>

- (11) a. What did only John drink?  
       b. \*Only *John* drank only *BEER*.  
       c. ??Only *John* drank BEER.
- (12) a. \*It's not true that only John drank wine, only *John* drank only *BEER*.  
       b. ??It's not true that only John drank wine, only *John* drank BEER.

As in the case of questions, the intervener—*only John* in (11) and (12)—can be accommodated through strategies which alter the IS articulation of the sentence. In English these include structures which place the IS focus before the *only*-type operator, such as passivization (13) and specificational copular constructions (14). When the IS focus is the subject, the accommodation comes "for free": the configuration in (15)-(16), to be discussed below, is identical to that of (13)-(14).

- (13) a. What did only John drink?  
       b. Only *BEER* was drunk by only *John*.
- (14) It's not true that only John drank wine, BEER was the only thing that only *John* drank.
- (15) a. Who drank only beer?  
       b. Only *JOHN* drank only *beer*.
- (16) It's not true that Mary drank only beer, only *JOHN* drank only *beer*.

The distribution of intervention effects in these sentences is exactly as predicted under the IS analysis put forward in the previous section. That is, the effect is correlated with the position of the potential intervener: when the latter precedes the IS focus, as in (11)-(12), the result is illicit, but if it follows the IS focus, the sentence is acceptable. The potential intervener can follow the IS focus in one of two constellations: when the IS focus is the subject (15)-(16), and when the IS focus is the (underlying) object, but the syntactic structure reverses its order vis-à-vis the potential intervener. While in English this reversal can be achieved inter alia via passivization and specificational copular constructions, as shown above, in Catalan, for example, right-dislocation is possible (17).

---

<sup>4</sup> To the best of my knowledge, this data has not been previously discussed in the literature. The sole exception is Rooth (2010), who mentions an example analogous to (11) in the context of his theory of focus realization. However, he erroneously attributes the degradedness of (11) to a phonological constraint, and does not note its acceptable counterparts in (13)-(16).

### *Focus Intervention in Declaratives*

These examples also show that there is nothing semantically or pragmatically wrong with the sentences in (11)-(12): the meaning can be conveyed via a different structure.

- (17) a. Què va beure només el Joan?  
what drank only John  
'What did only John drink?'
- b. \*Només el Joan va beure només cervesa.  
only John drank only beer  
'Only John drank only beer.'
- c. Només cervesa, va beure només el Joan.  
only beer drank only John  
'Only beer, only John drank.'
- (Laia Mayol, p.c.)

The parallelism between the declarative examples and the questions examined in section 2 is clear. First, the unacceptable baseline configurations and their acceptable variants are the same, as schematized in (18). The difference between the configurations is correlated with a word order change in the case of questions, whereas in the declarative examples it can either be a function of the IS alone, dictated by the preceding context and reflected in the prosody, or a structural change.

- (18) a. \*/??[... *only* ...] [... XP ...]  
b. [... XP ...] [... *only* ...]

The set of intervention triggers in questions and declaratives is also the same; in addition to the examples with *only* above, it is possible to illustrate that intervention effects in declaratives are caused by NPIs in languages like Japanese. For lack of space I do not provide the relevant examples here. Lastly, as illustrated in Eilam (2010) with respect to questions, intervention effects in declaratives can be ameliorated in certain structures by virtue of the pragmatic properties associated with these structures, and not necessarily mediated by the syntax or the prosody. Thus, placing the potential intervener in a pseudocleft derives a well-formed sentence, as in (19), because the content of the free relative, including the *only*-phrase, is presupposed and hence backgrounded.

- (19) a. What did only John drink?  
b. What only *John* drank was BEER.

To complete the description of the declarative data and further illustrate its import, I introduce an observation made by Atlas (1991) regarding the truth conditions of the pair of sentences in (20). As noted by Atlas, (20b) entails that no one other than John eats rice (and that rice is the only thing that no one but John eats), while (20a) does not.

- (20) a. Only John eats only rice.  $\nrightarrow$  No one other than John eats rice.  
b. Only rice is eaten by only John.  $\rightarrow$  No one other than John eats rice.

Atlas attributes the difference between the sentences to a putative semantic difference between the active and passive voice in English. Although there may be a variety of differences between the active and passive, I know of no independent evidence for a truth-conditional distinction between the two. Moreover, there is no need to ascribe the pattern in (20) to properties of the active or the passive; rather, it falls out from the possible questions under discussion (QUD) each sentence can answer, in accordance with the configurations described in (18). Thus, while (20a) can be an answer to the QUD *Who eats only rice* (21), and hence does not entail that John alone eats rice, it cannot answer the QUD *What does only John eat*; as illustrated in (22b), this would require the illicit configuration of (18a). (20b), however, can be the answer to the latter QUD, since as shown in (22c), it will have the well-formed configuration of (18b).

- (21) a. QUD: Who eats only rice?  
       b. Only *JOHN* eats only *rice*.  $\leftrightarrow$  No one other than John eats rice.
- (22) a. QUD: What does only John eat? / What is eaten by only John?  
       b. \*Only *John* eats only *RICE*.  
       c. Only *RICE* is eaten by only *John*.  $\rightarrow$  No one other than John eats rice.

Decisive evidence that this difference between the sentences is not a function of the active/passive distinction is provided in (23), a specificational construction which has the same entailment as the passive in (20b).

- (23) *RICE* is the only thing that only *John* eats.  $\rightarrow$  No one other than John eats rice.

To summarize, the configurations schematized in (18) affect not only the judgments speakers give for a sentence, but also potentially its truth conditions. These configurations are information structural in nature, as they make crucial reference to the notion of IS focus, and should therefore be accounted for under the IS approach to intervention. However, there are certain aspects of the declarative examples which distinguish them from questions and thus require further attention.

The key difference between the question and declarative contexts is the fact that in the latter case, the *only*-phrases—i.e. the interveners—are not IS foci. Rather, since they are material repeated from a lead-in sentence, whether an interrogative or a declarative, they are not potential candidates for IS focushood. Why are *only*-phrases nevertheless incompatible with the IS articulation of the declarative sentences under discussion? I argue that they cannot fulfill the role of the two available IS categories in these examples, topic and tail. They cannot be topics because of their non-referentiality, as discussed in section 2. The *only*-phrases in the declarative examples cannot be tails as well because subjects are default topics (Reinhart 1981, Lambrecht 1994, Erteschik-Shir 1997), and subjects preceding the nuclear stress are specifically incompatible with tailhood (Vallduví 1990). In order for a subject to be a tail, it typically has to appear in a postnuclear position, which is by and large not possible in English. In a language like



Catalan this option is available and utilized, as in (24), where the object *de pa* is the topic, and the subject *mon germa* the tail. The awkward English translation, using right dislocation, reflects the lack of an appropriate equivalent in this language.

- (24) De pa      no en<sub>i</sub> MENJA, mon germà.  
      of bread no OBJ eat.3S    my    brother  
      'Bread he doesn't eat, my brother.'(Vallduví 1990:135)

Independent evidence for the putative relation between subjecthood, topic status, and the occurrence of intervention effects comes from two types of sentences: those in which the potential intervener is the subject but not the topic, and those in which it is not the subject, and therefore does not have a strong correlation with topicness. The first type is provided in (25), a *there*-existential sentence, in which the subject, which also happens to be a potential intervener, is not the topic; rather, this role is filled by the implicit spatio-temporal parameters of the sentence (see Erteschik-Shir 1997).<sup>5</sup>

- (25) a. Where are there only skyscrapers?  
      b. There are only *skyscrapers* only in *TOKYO*.

The second type of sentence is illustrated in (26), where the potential intervener is the indirect object rather than the subject.

- (26) a. What did Mary give only John?  
      b. Mary gave only *John* only a *BOOK*.

As expected, both examples are considerably better than the previous sentences, in which the intervener is a standard subject and therefore a preferred topic. The first example shows that elements which are not necessarily topics do not create intervention effects, and the second that non-subjects do not trigger these effects; in other words, insofar as a potential intervener can be a tail, it will be innocuous in terms of intervention. Note also that the difference between the previous sentences and (25)-(26) constitutes further evidence for the IS analysis. There is no obvious syntactic or semantic distinction which would predict the attested patterns of acceptability.

The proposed analysis for the unacceptable declarative examples also allows us to explain what underlies their minimally different acceptable counterparts. The case of subject IS foci, as in (27), is clear: the potential intervener is an object and unquestionably deaccented, meaning that nothing bars it from being the tail.

- (27) a. Who drank only beer?(=15)  
      b. Only *JOHN* drank only *beer*.

---

<sup>5</sup> I thank Satoshi Tomioka for suggesting this type of sentence.

The English passive in (28) demotes the potential intervener so that it is not the grammatical subject and places it in the domain of deaccenting following the IS focus, enabling it to be the tail. In the Catalan example in (29), right-dislocation is specifically used to mark elements as tails (see Vallduví 1990).

- (28) a. What did only John drink? (=13)  
b. Only *BEER* was drunk by only *John*.

- (29) a. Què va beure només el Joan? (=17)  
what drank only John  
'What did only John drink?'  
b. Només cervesa, va beure només el Joan.  
only beer drank only John  
'Only beer, only John drank.'

There remains one example which must be considered in light of the IS analysis of intervention in declaratives. This analysis, if correct, seems at first glance to run into difficulties given (30)-(31), repeated from (8)-(9). In this case, an *only*-phrase is permitted in an alternative question because it has been introduced in a preceding context and thus does not compete for the status of IS focus.

- (30) Context: The graduate students in linguistics took two preliminary exams, in syntax and phonology, last week. The results were surprising: there was one exam that all the students, including John, passed, but only John passed the other.

- (31) Did only John pass syntax or phonology?

If prenuclear subjects generally resist being tails, and this is a key factor underlying the intervention effects in declaratives, why does it not yield ill-formedness in (31)? The reason, I argue, is that the context in (30) and the question itself unambiguously establish the exams, rather than the subject *John*, as the topic of the question. The question is a request for information regarding which of the exams only one student, John, passed, and not a request for information about John. Accordingly, the potential intervener *only John* can be the tail, despite its prenuclear subject status, and a clash between its non-referentiality and topichood is avoided. The same is not true of the declarative examples, where no alternative to the subject as topic is set up.

The information structural approach to intervention has been successfully applied in this section to the novel data from declarative sentences. On a par with questions, intervention effects in these sentences result from incompatibility between the IS categories available in a sentence and the elements making up the sentence. The fact that the IS analysis proposed for *wh*- and alternative questions also captures the declarative examples strongly supports its validity as a general approach to intervention.

(32) General Minimality Effect MIN: The evaluation of alternatives introduced by an XP cannot skip an intervening  $\sim$  operator.

This approach seems to fare no better than syntactic analyses, since it does not make the IS distinctions necessary to tell apart well-formed vs. ill-formed configurations involving potential interveners. In fact, given a further assumption Beck makes, which is crucial for her theory, the focus structures described here refute the constraint in (32). In the analysis of intervention in *wh*-questions, Beck assumes that *only*-type operators always attach to verbal projections and clausal nodes, even in cases of apparent DP adjunction. This derives the LF representations in (34) and (36) for the acceptable and unacceptable examples in (33) and (35), respectively (Q/A in these representations is the operator evaluating question/answer congruence).<sup>6</sup>

(35) \*Only *John* drank only *BEER*.

<sup>6</sup> In order to get the theory off the ground, Beck is forced to make the debatable assumption that  $\sim$  is not selective in choosing which foci to evaluate. See Wold (1996) for an alternative model, involving coindexing.

(36) [Q/A<sub>C</sub> [~C [only<sub>D</sub> [~D [only<sub>E</sub> [~E [John<sub>F2</sub> drank beer<sub>F1</sub>]]]]]]]]

The representations are identical, and in particular, there is no obvious way to predict the well-formedness of (33). Although Beck gives independent motivation for the assumed positions of the *only*-type operators in these representations, they are needed in any case in her theory. If *only*-type operators could attach locally to DP subjects, intervention effects in *wh*-questions would not be expected under the theory to begin with. That is, the operator would evaluate the alternatives introduced by the DP subject and would not interfere with the relation between the higher question operator and *wh*-phrase. Furthermore, because focus association is not selective according to Beck (see fn. 6), the semantic computation cannot be fixed so as to avoid unintended associations. All in all, there seems to be no way to salvage the theory and still be able to capture the entire range of attested data.

Two types of potential non-information structural explanations for intervention in declaratives have been assessed here. Both fall short, because the acceptable and unacceptable sentences do not seem to differ in any relevant syntactic or semantic property. Rather, it is only their IS articulation, created by different preceding contexts and structures, and possibly reflected in the prosody, which tells them apart. Accordingly, only an IS approach of the type first proposed to account for intervention in questions is able to cover this data.

#### 4. Conclusion and Implications

This paper has sought to substantiate the information structural analysis of intervention effects, by demonstrating that it extends to a set of data hitherto unnoticed in the literature. The same basic phenomenon observed in *wh*- and alternative questions, where an *only*-type operator influences their acceptability or interpretation, is also found in declarative sentences. However, in order to detect this phenomenon in declaratives, it is necessary to set up a particular lead-in context, which in turn forces a specific IS articulation on the declarative sentence. Since each element of the sentence is then mapped onto a given IS category, any mismatch between properties of these elements and their IS label gives rise to degradedness, i.e. intervention effects.

Although the context-sensitivity of intervention effects is by itself an indication of their information structural nature, a number of potential syntactic and semantic explanations were nonetheless considered. These were found to be lacking, since they cannot distinguish the acceptable sentences from their unacceptable counterparts. By appealing to the IS approach proposed for intervention in questions in Tomioka (2007) and Eilam (2010), it is possible to cover the entire range of data.

The IS approach espoused here requires a strict separation between the semantic and IS notions of focus. A semantic focus, such as that associated with the *only*-type operators discussed above, is not always an IS focus. If it were, we would not be able to

ameliorate intervention effects by backgrounding the *only*-phrase, as illustrated in English alternative questions, nor would we be able to differentiate the acceptable and unacceptable declarative examples. This supports pragmatic, or strong, theories of focus association (Vallduví 1990, Rooth 1992, Dryer 1994, a.o.), since they make the distinction between semantic and IS notions of focus. It contests the rival semantic, or weak, class of theories (Rooth 1985, Krifka 1992), which argue that operators like *only* need to associate with an IS focus because it alone provides the required quantificational structure. In such a theory, the crucial distinction between semantic and IS foci becomes moot.

The findings of this study also have significant implications for the conception of IS in the grammar. A particular phenomenon—intervention effects—was shown to reduce to well-formedness conditions which are exclusively information structural in nature. The uniqueness of focus and the incompatibility between *only*-phrases and topichood, for example, are generalizations which can be stated only in IS terms. The existence of such IS well-formedness conditions is robust evidence for the claim that IS is an autonomous level of organization of linguistic information (cf. Vallduví 1990). This level interacts with other levels of representation in the linguistic system, and imposes restrictions of its own on the output of the system. Future work may examine the form of IS representations, the way in which they are derived, and their relationship to other levels of representation.

## References

- Atlas, Jay. 1991. Aboutness, fiction, and quantifying into intentional contexts: Prior, Quine, and Searle on propositional attitudes. Paper presented at the Symposium on Reference, University of Duisberg, Duisberg, Germany, March 1991.
- 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. 2007. The grammar of focus interpretation. In Interfaces + Recursion = Language? Chomsky's Minimalism and the View from Syntax-Semantics, ed. Uli Sauerland and Hans-Martin Gärtner, 255–280. Berlin: Walter de Gruyter GmbH.
- Beck, Sigrid, and Shin-Sook Kim. 2006. Intervention effects in alternative questions. Journal of Comparative Germanic Linguistics 9:165–208.
- Dryer, Matthew. 1994. The pragmatics of focus-association with *only*. Paper presented at the 1994 Winter Meeting of the LSA, Boston, Massachusetts.
- Eilam, Aviad. 2009. The absence of intervention effects in Amharic: Evidence for a non-structural approach. Brill's Annual of Afroasiatic Languages and Linguistics 1:204–254.
- Eilam, Aviad. 2010. The information structural basis of focus intervention effects. Ms., University of Pennsylvania.

Aviad Eilam

- Erteschik-Shir, Nomi. 1997. The Dynamics of Focus Structure. Cambridge: Cambridge University Press.
- Kim, Shin-Sook. 2005. Focus intervention effects in questions. Paper presented at Theoretical East Asian Languages 3, Harvard University.
- Krifka, Manfred. 1992. A compositional semantics for multiple focus constructions. In Informationsstruktur und Grammatik, ed. Joachim Jacobs, 17–53. Wiesbaden, Germany: Westdeutscher Verlag.
- Lambrecht, Knud. 1994. Information Structure and Sentence Form: Topic, Focus, and the Mental Representations of Discourse Referents. Cambridge: Cambridge University Press.
- Newmeyer, Frederick J. 2004. On split CPs, uninterpretable features, and the "perfectness" of language. In ZAS Working Papers 35: Proceedings of the Dislocated Elements Workshop, ed. Benjamin Shaer, Werner Frey, and Claudia Maienborn, 399–421. Berlin: ZAS.
- Reinhart, Tanya. 1981. Pragmatics and linguistics: An analysis of sentence topics. Philosophica 27:53–94.
- Reinhart, Tanya. 1998. Wh-in-situ in the framework of the Minimalist Program. Natural Language Semantics 6:29–56.
- Rooth, Mats. 1985. Association with Focus. Doctoral dissertation, University of Massachusetts.
- Rooth, Mats. 1992. A theory of focus interpretation. Natural Language Semantics 1:75–116.
- Rooth, Mats. 2010. Second occurrence focus and *Relativized Stress F*. In Information Structure: Theoretical, Typological, and Experimental Approaches, ed. Malte Zimmermann and Caroline Féry, 15–35. Oxford: Oxford University Press.
- Tomioka, Satoshi. 2007. Pragmatics of LF intervention effects: Japanese and Korean wh-interrogatives. Journal of Pragmatics 39:1570–1590.
- Vallduví, Enric. 1990. The Informational Component. Doctoral dissertation, University of Pennsylvania.
- Wold, Dag. 1996. Long distance selective binding: The case of focus. In Proceedings of Semantics and Linguistic Theory (SALT) VI, ed. Teresa Galloway and Justin Spence, 311–328. Ithaca, NY: Cornell University.

Department of Linguistics  
University of Pennsylvania  
619 Williams Hall  
Philadelphia, PA 19104-6305

eilamavi@ling.upenn.edu