Scales, Implicatures, and in fact, if not, and let alone Constructions.

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SCALES, IMPLICATURES, AND *IN FACT, IF NOT,* AND
LET ALONE CONSTRUCTIONS

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0. Introduction

The purpose of this paper is to examine the nature of three English construc-
tions exemplified in (1) in relation to the phenomenon of conversational implica-
ture.

(1) a. Rebecca ate *some* of the apples, **in fact** *all* (of them).
     b. Paul wrote *thirteen* books, **if not** *fourteen.*
     c. Bob wasn't a *lieutenant,* **let alone** a *general.*

These constructions have been claimed to be used in canceling or suspending
conversational implicatures, or to be more precise, Quantity implicatures (Horn
(1972, 1989)). Conversational implicature is that part of the speaker's meaning
that is conveyed by virtue of the assumption that the speaker and the hearer are
obeying the Maxims of Conversation (Grice (1967)). The Quantity implicature in
particular is conveyed by virtue of the assumption of the observance of the
Quantity-1 Maxim: Make your contribution as informative as is required. Be-
cause of the observance of this Maxim, when the speaker makes a weaker state-
ment P rather than a stronger statement Q, s/he implicates that s/he does not be-
lieve that (or know if) Q holds (see Gazdar (1979), Horn (1972, 1989)). For ex-
ample, in uttering (2a) instead of (2b) the speaker implicates (2c) (which is often
abbreviated as 'not all'). Note that the relative strength of (2a) and (2b) is deter-
mined by quantifiers *some* and *all,* which "license" this implicature.

(2) a. Rebecca ate *some* of the apples.   (weaker statement)
     b. Rebecca ate *all* of the apples.   (stronger statement)
     c. 'The speaker does not believe Rebecca ate all of the apples.'

One property of implicatures is that they can be canceled (Grice (1967)). Horn
claims that this is what is happening in (1a) with the use of the *in fact* construc-
tion. In (1a) a weaker statement (2a) is followed by *in fact all* (in which *all*
abbreviates a stronger statement given in (2b)). This addition of *in fact all* cancels
the implicature of (2c), which can be produced on the basis of (2a). In (1b), by
contrast, implicature is not canceled but *suspended* with the use of the *if not* con-
struction; in this case the possibility of 'not fourteen' is left open.

Horn identifies several constructions as implicature-canceling or suspending.
They are given in (3a) and (3b), respectively. Note that *let alone* exemplified in
(1c) is included in the latter.

(3) a. W, {indeed / in fact / and what's more} S
         not only W, **but** S.
     b. **(at least)** W, **if not (downright)** S

W, {or / and possibly} even S
S, or at least W[1]
not (even) W, {let alone / much less} S

Here, "S" represents an expression higher in scale, like *all* in (1a), and "W", a lower one, like *some*. These frames have been used as a diagnostic tool for identifying scales that license Quantity implicatures, which are known as Horn scales (Horn (1972, 1989)). Following Horn, I will indicate such a scale in angular brackets with items ordered from the strongest to the weakest, as in ⟨*all, some*⟩.

The purpose of this paper is show that such constructions are, though certainly scale-sensitive, not in fact valid diagnostic tools for identifying the set of scales that license implicature: the scales licensing Quantity implicatures and the scales insertable into cancellation and suspension constructions are not identical. I will point out that this is because of different conditions placed on those scales that function as Horn scales and those insertable into these constructions.

1. The Kinds of Scales

Previous to the main discussion, what is meant by scales should be clarified. By the term 'scale' I mean any ordered set of expressions in which it is possible to determine, for any two items in that set, whether one item is higher or lower than the other (cf. Hirschberg (1985)).

Various kinds of scales that satisfy this definition are known to license Quantity implicatures at least in some contexts (Hirschberg (1985), Matsumoto (1995)). Some consist of quantifiers such as ⟨*all, some*⟩. In the case of ⟨*all, some*⟩, the two items in a scale trigger an entailment relationship between the propositions containing them. For example (4b) entails (4a).

(4) a. *Some* went to the party.   (weaker proposition)
     b. *All* went to the party.   (stronger proposition)

Degree adjectives and adverbs also form a scale. One example is ⟨*hot, warm*⟩. Note that (5b) entails (5a).

(5) a. It is *warm* in California today.   (weaker proposition)
     b. It is *hot* in California today.   (stronger proposition)

Other scales triggering entailment consist of items in "hyponymy" relationship, such as ⟨*German shepherd, dog*⟩. (6b) entails (6a).

(6) a. He bought a *dog*.   (weaker proposition)
     b. He bought a *German shepherd*.   (stronger proposition)

A stronger item in this kind of scale (e.g., *German shepherd*) is higher in lexical specificity than the weaker item (e.g., *dog*).

Somewhat different are scales that consist of rank terms. Examples of these include ⟨*general, ... , colonel, ... , lieutenant, second lieutenant*⟩. In this case, items in a scale do not trigger entailment in the same way as (4), (5) and (6) above. For example, (7b) does not entail (7a). On the contrary, (7b) entails (7c), given the nature of rank, which is mutually exclusive.

(7) a. He is a *colonel*.   (weaker proposition)
     b. He is a *general*.   (stronger proposition)
     c. He is not a *colonel*.

Other scales are pragmatically defined. For example, ⟨*New York, Chicago, Denver, Los Angeles*⟩ can be a scale when talking about a traveler going from west to east. In such a context, (8b) can be regarded as a stronger proposition than (8a).

(8) a. He reached *Denver.*   (weaker proposition)

   b. He reached *Chicago.*   (stronger proposition)

One might note here that inherently negative scales have the item closest to the negative extreme as a stronger item; hence ⟨*none, few*⟩, as in (9). Note that (9b) entails (9a).

(9) a. *Few* came to the party.   (weaker proposition)

   b. *None* came to the party   (stronger proposition)

A related notion to be noted here is scale reversal. In negative contexts order in a scale is reversed. This affects an implicature produced. In (10) implicature is generated on the basis of ⟨*not thirteen, not fourteen*⟩ (cf. ⟨*fourteen, thirteen*⟩).

(10) a. Paul didn't write *fourteen* books.

   b. 'The speaker does not believe that Paul didn't write *thirteen* books (i.e., The speaker believes that Paul wrote *thirteen* books).'

The reversal also affects the items inserted in the constructions examined in this paper. In (11), S occupies the W slot, and W, the S slot.

(11) Rebecca didn't eat *all* the cookies, in fact she didn't eat *any* of them.

This is not limited to negative contexts, as shown below (see König (1991: 101-107) for discussion).[2]

(12) a. He might be satisfied with *five* of them, in fact (just) *one or two.*

   b. He might be satisfied with *five,* if not *three or four.*

   c. He might not be satisfied with *five,* let alone (just) *one or two.*

In this paper I will use only those scales that are not reversed unless explicitly mentioned.

2. *In fact*

2.1. The Function of the *in fact* construction

Let us now discuss the *in fact* construction as a diagnostic for identifying Horn scales. One example of the *in fact* construction is given in (13a). In this sentence a stronger proposition is abbreviated in the expression placed in the S slot. Sometimes the stronger proposition is expressed in a full clause, as in (13b). Like Horn (1972, 1989), I treat both cases as instances of the *in fact* construction.

(13) a. It was *warm* (=W), in fact *hot* (=S).

   b. It was *warm* (=W). In fact it was hot (=S).

The primary function of the *in fact* construction is to introduce a stronger statement (which contains S) whose factuality merits mentioning, after making a weaker statement (which contains W). In many situations it is inappropriate or "uncooperative" to make weaker and stronger statements, given that the utterance of the former implicates that the speaker does not believe that (or know if) the latter holds. There are, however, occasions on which there is a reason to make such two statements without sounding seemingly contradictory. One is the case where the truth of the weaker statement is contextually in focus and the

stronger statement represents an additional statement made by the speaker, as is the case in (14). This is one case in which the use of the *in fact* construction is most appropriate.

> (14)   A: Did Aaron hit *forty* home runs last year?
>
>   B: Of cóurse, he hit *forty,* in fact he hit *forty-twó.*

Another situation is the case of 'self repair' by afterthought: adding information the speaker has noticed or recalled before s/he moves on to the next utterance. An example is (15).

> (15)   This coffee is *warm* ... [realizing how hot it is] ... in fact *very hot.*

2.2.   Compatibility of S and W

The above-stated function of the *in fact* construction constrains the kinds of scales that can be inserted. Given that the speaker asserts the truth of both stronger and weaker propositions, (16) must be satisfied:

> (16)   The Compatibility Condition: The weaker proposition and the stronger proposition must be compatible.

This condition has two consequences with regard to what kinds of scales are insertable. First, the *in fact* construction does not accommodate mutually exclusive terms, such as rank terms (Horn (1989)), at least under certain circumstances. For example, consider (17a) and (17b).

> (17)   a.   *John is a colonel, in fact a general.
>
>   b.   *John and Sue are engaged, in fact married.

Since a person cannot be a colonel and a general at the same time, (17a) is ruled out because of the violation of the Compatibility Condition. The same is true of (17b).

The condition relevant here, however, is not really placed on the kinds of expressions inserted (such as rank terms) per se. Rank terms can be used in the *in fact* construction so long as both weaker and stronger propositions are compatible. For example, (18a) and (18b) are acceptable, since a person can be a second lieutenant and a colonel during different periods of time, or can be neither a second lieutenant nor a colonel at one period.

> (18)   a.   John made *second lieutenant,* in fact he made *colonel* (later).
>
>   b.   John is not a *colonel,* in fact he is not even a *second lieutenant.*[3]

The second consequence is that W must be readily interpreted in an 'at least' reading; otherwise the two propositions would not be compatible. For example, *warm* in (13) above must be interpreted as 'at least warm'. This forces the cancellation of the implicature of 'not hot' produced on the basis of the weaker statement.

Some scalar expressions do not allow this sort of 'at least' interpretation easily. Examples include *slightly warm* as opposed to *warm.* The *in fact* construction does not easily accommodate this expression in the W slot, as shown in (19).

> (19)   ?It is slightly warm, in fact it is very warm.

It appears that what Israel (in press) calls "detensifiers" (*moderately, rather, somewhat,* etc.) generally behave like *slightly* in this regard.

Other similar examples include scales whose status for licensing Quantity implicature is controversial, such as scales involving *almost.* Sadock (1981) and

Atlas (1984) argue that the speaker of (20a) conversationally implicates (20b) (see Morgan (1969) and Hitzeman (1994) for a differing view). However, as noted by Sadock and Atlas themselves, it is not natural to say (20c).[4]

(20)   a.   He met *almost one hundred* people.
        b.   'He did not meet *one hundred* people.'
        c. ??He met *almost one hundred* people. In fact he met *one hundred*.
        d. ?He met not just *almost one hundred* people, but (in fact) *one hundred*.[5]

This means either 1) some implicatures are not cancelable with the *in fact* construction and (20b) is such an implicature (cf. Sadock (1981)), or 2) all implicatures are cancelable and (therefore) (20b) is not an implicature.[6] The first position appears to be correct, given that cancellation does work better in the *not just W but (in fact) S* construction, as in (20d).[7] (The reason *not just W but S* construction is a stronger canceler is probably related to the fact that implicature is explicitly *denied* in this case (cf. not just *W*); in the *in fact* construction, by contrast, it is *contradicted* by S.) If this is the case, it means that some Horn scales cannot be hosted by the *in fact* construction. I will come back to the issue of *almost* in 3.2.

Another potentially problematic case involves *only*. Consider (21). What is clear is that (21a) logically entails (21b). What is not entirely clear is the relationship between (21b) and (21c). Horn (1969) claimed (21a) presupposes (21c). More recently Horn (1992) claims that saying (21a) conversationally implicates (21c) (see also McCawley (1981:226)). Atlas (1991, 1993) argues that (21a) logically entails (21c).[8] What is of our interest here is that it is not possible to say (21d); the putative implicature of (21c) cannot be canceled with the *in fact* construction.

(21)   a.   John met *only three* people.
        b.   'John did not meet *more than three* people.'
        c.   'John met *three* people.'
        d. *John met *only three* people. In fact he {didn't meet even *three*/met *fewer than three*}.[9]

This poses a problem for the *in fact* construction as a test for Horn scales if (21c) is indeed an implicature. Fortunately, however, the evidence for the implicature status of (21c) appears to be weak: it cannot be canceled with other canceling constructions (e.g., *not just only three but three*) or be reinforced (e.g., *only three, but three;* cf. *three, but not four*) (see also Atlas (1993); see Sadock (1978) for reinforceability as a test for implicatures).[10]

2.3. *In Fact* and Conversational Condition on Horn Scales

A more serious problem with using the *in fact* construction as a diagnostic for identifying Horn scales comes from the following observation. Consider (22).

(22)   A: What's up?
        B: a.   We bought a *dog*.
              b.   We bought a *dog,* in fact a *German shepherd*.

(23)   'The speaker does not believe that 'we' bought a German shepherd.'

(22a) cannot be uttered to implicate (23) in this context. However, it is possible

to say (22b) in this context. This shows that the *in fact* construction can host scales that do not license an implicature in the context in which it is used.

This non-production of a Quantity implicature is attributed to a context-based constraint on implicature-licensing scales that I elsewhere called the Conversational Condition on Horn scales (Matsumoto (1995)), stated in (23).

(23)   The Conversational Condition: The non-use of S must not be attributed to the observance of any one of the information-selecting Maxims of Conversation other than the Maxims of Quality and Quantity-1 (e. g. Quantity-2, Relation).

The Conversational Condition presupposes that the production of a Quantity implicature is based on the inference that the failure to make a stronger statement is due to the speaker's observing one of the two Maxims of Quality: 1) Do not say what you believe to be false; or 2) Do not say what you do not have evidence for. In other words, an implicature can be produced when the speaker and hearer share the assumption that the only reason that the speaker should fail to make a stronger statement (with the use of S) is that s/he does not believe that it holds, or does not know if it holds. This inference would not be valid if it is possibel for the speaker to fail to make a stronger statement for some other reason. Such other reasons might be that S represents information that is not required to be conveyed in a given context; S represents information that is not relevant to the current discourse; S is an obscure expression, etc.; i.e., the failure is due to the observance of Maxims of Quantity-2 (Do not make your contribution more informative than is required), Relation (Be relevant), or Obscurity Avoidance (Avoid obscurity). In these cases the non-use would not be noticed by the hearer or at least cannot be attributed by the hearer to the observance of the Maxim of Quality, and therefore an implicature cannot be produced. Note that the satisfaction of this condition is context-dependent; it depends on the particular context of the utterance whether an S represents information required or relevant in a given discourse.

The non-production of a Quantity implicature in (22a) is due to this condition. In describing the purchased object, the speaker B could have used a term at a different level of a taxonomy, *animal, dog, German shepherd,* etc. (see Cruse (1977) and references cited therein). In the context given, however, the speaker is not required to give more information than is carried by an unmarked, "basic-level" term, such as *dog*; information about a specific breed of dog is not necessary in this context, and therefore the failure to use a specific breed name does not satisfy the Conversational Condition. Hence, ⟨*German shepherd, dog*⟩ does not license an implicature in this case.

In contrast, an implicature can be produced when information about the breed of a dog is expected or required in the particular context in which the word *dog* is used. Matsumoto (1995) points out that this is true in (24).

(24)   a.   Notice: LOST: Big brown and white *dog* with a long tail. Has white patch on forehead and left front paw. Answers to "Rex". Lost on March 10 in Manzanita Park.

       b.   'The poster does not believe that the dog described in (24a) is a German shepherd (or any other breed that is commonly known);

it is perhaps a mongrel.'

Pairs of expressions insertable into the *in fact* construction are not subject to the Conversational Condition. In using the *in fact* construction, S is actually uttered. Therefore S does not have to be an expression of the type whose *non-use* must satisfy a certain condition so that the failure to use it can be noted by the hearer. Hence, one can say (22c).

3. *If not*

3.1. The Nature of *if not*

An example of the *if not* construction is given here in (25).

    (25)   It is *warm* (=W) if not *hot* (=S).

In this example, the speaker is asserting that at least the proposition 'it is warm' holds, leaving the possibility of 'it is hot' open, thereby suspending the implicature of 'it is not hot'. Unlike *in fact* above and *let alone* below, S (which represents a stronger proposition in an abbreviated form) in this construction cannot be fully expressed as a clause without losing the intended reading.

The *if not* construction considered here differs from a superficially identical construction exemplified in (26).

    (26)   Kathie is pretty, if not clever.

In (26), *if not* is synonymous with *though not,* and in this case, two expressions inserted in this construction do not have to be scalar. The *if not* construction considered here is differentiated from this use in that S is pronounced with a high pitch (Horn (1972)).

The *if not* construction forces a scalar interpretation of the expressions involved. In each of the following examples, the speaker is using a somewhat unexpected pair of expressions in the *if not* construction.

    (27)   a.   She was evidently attempting to *explain,* if not *excuse,* this impetuosity.   (cited in Westney (1986))

            b.   Most photographers were *inarticulate* if not *subhuman.*
                                                (cited in Horn (1989))

            c.   The new writings on children and families read like a prophecy of doom. Even the titles carry a sense of *urgency,* if not *despair*: "Who Cares for Children?", "The American Family in Decline", ...   (cited in Ota (1980))

In these cases, the hearer is forced to interpret the pair as forming a scale, given the fact that the speaker has placed them in the *if not* construction.

The speaker's assumption of such a scale might not be shared by the hearer, unless it is evoked as a contextually relevant one in a previous discourse (i.e., unless the Conversational Condition is satisfied). For this reason the use of W out of such a context cannot carry an implicature to be canceled in the *if not* construction. Thus the speaker of (28a) cannot implicate (28b) unless the scale of ⟨*subhuman, inarticulate*⟩ is established in the context.

    (28)   a.   Most photographers were *inarticulate.*

            b.   'The speaker does not believe that most photographers were subhuman.'

3.2. *If not* and Implicature

As mentioned, Horn (1989) claims that this construction is used to suspend an implicature of 'not S' which is produced by the utterance of a weaker proposition. A close examination suggests, however, this construction can host scales that do not license Quantity implicatures; the construction can be used whether or not W is used to implicate 'not S'.

First, the *if not* construction can host those scales that do not easily occur in the *in fact* construction. I pointed out above that (20c) and (21d) are not acceptable, showing that (20b) and (21c) are not cancelable information in (20a) and (21a). Examples (29a) and (29b) below show that equivalent sentences with the *if not* construction are acceptable. (The acceptability of sentences like (29b) is noted in Declerck (1994). Note that the scale assumed in (29b) has *only five* as S and *less (than three)* as W, because of the negativity of this scale.)

> (29) a. He hit *almost forty* home runs, if not *forty*.
>   b. He has written *only five* books, if not *fewer*.[11]

This indicates that, whether or not (20b) and (21c) above are implicatures or entailments, what cannot be canceled with the *in fact* construction can sometimes be suspended with the *if not* construction. This means that the *in fact* construction and the *if not* construction cannot stand together as diagnostics for identifying Horn scales.[12]

Those who would like to argue that (21c) (which is suspendable but uncancelable by any constructions) is an implicature need to clarify what they mean by implicature, given that one definitional property of implicature is cancelability (not suspendability) according to Grice (1975). On the other hand, those who would like to argue that it is an entailment have independent evidence supporting that entailments are uncancelable but suspendable with the *if not* construction, at least in some cases. As the following data in (30) show, the *if not* construction welcomes those pairs of expressions which trigger entailments, not implicatures.

> (30) a. John is a *colonel,* if not a *géneral*.
>   b. John and Sue were *engaged* at that time, if not *márried*.
>   c. He has *exactly 100* books, if not *exactly 110*.[13]

The reason that the sentences in (30) are acceptable is that the *if not* construction is not subject to the Compatibility Condition. Since in using this construction the speaker is not committing himself or herself to the truth of a stronger proposition, *if not* sentences are not contradictory even when weaker and stronger propositions are incompatible and one entails the falsity of the other.

3.3. Lexical Specificity and the Closeness of W and S

The pairs of expressions that the *if not* construction accommodates are restricted in some other respects. First, unlike the *in fact* construction, the *if not* construction is sensitive to (31).

> (31) Lexical Specificity Condition: S and W must be at the same level of lexical specificity.

Consider (32a) and (32b).

> (32) a. ??Mark was a *commissioned officer,* if not a *cólonel*.
>   b. ??John bought a *dog,* if not a *German shépherd*.

  c. ??John bought a *car,* if not a *Corólla.*

(32a), (32b), and (32c) are not acceptable in the intended reading of 'Mark was a commissioned officer, perhaps a colonel', etc. This is because items in the *if not* construction must be on the same level of lexical specificity (i.e. they must be non-hyponymic).

  Another condition that *if not* is subject to concerns the values of S and W. Since *if not* is used to express the speaker's uncertainty about the exact value on a scale, S and W in this construction must be close in terms of the values that they represent, as suggested by the following difference:

  (33) a. Mary bought eight books, if not níne.

     b. ??Mary bought five books, if not níne.

4. *Let alone*

4.1. The Nature of *let alone*

 One example of a *let alone* sentence is given in (34).

  (34) a. Bill didn't write (even) *three* books ($=$W), let alone *thirteen* ($=$ S).

     b. 'Bill didn't write three books.'   (stronger proposition)

     c. 'Bill didn't write thirteen books.'   (weaker proposition)

The function of *let alone* in (34a) is to enable the speaker to assert (34c), by pointing out that even (34b) holds (see Fillmore, Kay & O'Connor (1988) (hereafter FKO), Verhagen (1995)). In (34a), (34c) is abbreviated in the expression *thirteen.* The truth of (34c) is contextually important, and it is usually the proposition whose factuality is discussed previously and/or developed further in the discourse. What is to be noted here is that (34b) is a stronger proposition, though it contains W, and (34c) is a weaker proposition, though it contains S. This is because of the scale reversal mentioned above. Note also that the stronger proposition precedes the weaker proposition, unlike the *in fact* and *if not* constructions.

  As FKO have noted, the weaker proposition does not have to be syntactically negated. Sentences that can host a negative polarity item in general can be a weaker proposition in this construction even if they are not syntactically negated. Examples include (35a) and (36a) (*only* in the subject NP and the adverbial *barely* are negative polarity triggers in these sentences).

  (35) a. Only linguists would *buy* that book, let alone *read* it.

     b. People other than linguists would not buy that book.

     c. People other than linguists would not read it.

  (36) a. He barely reached *Denver,* let alone *Chicago.*

     b. He did not reach any city further than Denver.

     c. He did not reach Chicago.

The reason why such sentences are possible has not been fully accounted for (cf. FKO's puzzlement over *barely* sentences). This possibility, I argue, is based on the background propositions of the stronger (first) proposition in (35a) and (36a). As Linebarger (1987) points out, syntactically affirmative negative polarity sentences entail (or imply in some way) a negative proposition. The stronger (first)

statement made in (35a), for example, entails (35b); that in (36a) entails (36b). These entailed propositions license the inference that (35c) and (36c) do not hold, which is asserted in (35a) and (36a).[14] Such possibility of inference by means of background propositions appears to be one necessary condition for licensing *let alone* in affirmative sentences. This condition, however, does not seem to be a sufficient condition for licensing *let alone* or negative polarity items in general. See Kadmon and Landman (1993), Yoshimura (1994), and Israel (in press) for discussion.[15]

4.2. *Let alone,* Implicature, and Compatibility of S and W

Horn (1989) categorizes the *let alone* construction as a construction that is used, like the *if not* construction, to suspend an implicature of 'not W', to leave the possibility of S open (see (3b) above). However, this is not the case: the *let alone* construction is used to assert that both 'not W' (stronger proposition) and 'not S' (weaker proposition) obtain.

If any implicature were involved in the use of this construction, it would be based on a weaker proposition ('not S'), the utterance of which implicates that the speaker is not in a position to make a stronger statement ('not W'). For example, the speaker of (34c) implicates that s/he does not believe (34b) holds (i.e., s/he believes that Bill did write three books). This is denied in (34a), since (34b) is asserted to be true. However, this is not the suspension of an implicature but cancellation. Moreover, this cancellation is not the intended function of this construction. The function is to assert that the weaker proposition like (34c) holds, *given that* even the stronger proposition like (34b) holds, rather than that the stronger proposition holds *in spite of* the implicature based on the weaker proposition.

Horn's view seems to be based on the observation that sentences like (37a), which are used to assert (37b) and (37c), are acceptable, and in this respect *let alone* is similar to the *if not* construction, which the speaker uses when s/he does not commit to the truth of a stronger proposition, rather than the *in fact* construction, which s/he uses when s/he does (cf. Horn (1989: 546)).

> (37)   a.   John is not (even) a *colonel,* let alone a *general.*
>   b.   'John is not a colonel.'
>   c.   'John is not a general.'

However, what is at issue here is not the compatibility of W and S but 'not W' and 'not S'. What makes (37a) acceptable is that (37b) and (37c) are compatible, though their affirmative counterparts are not. The *let alone* construction is in fact sensitive to the Compatibility Condition; it requires the weaker and stronger negative propositions to be compatible.

Let alone welcomes ⟨*forty, almost forty*⟩ and ⟨*fewer than five, only five*⟩, which posed a problem for *in fact* because of compatibility. Since the negation makes the two items in each of these scales compatible without any question, there is less difficulty in inserting them into the *let alone* construction.

> (38)   a.   ?He didn't hit even *almost 40* home runs, let alone *40.*
>   b.   ?He didn't write (even) *only five* books, let alone *fewer.*

4.3. Lexical Specificity and Values of W and S

The issue of the lexical specificity of W and S in the *let alone* construction must also be carefully examined. FKO argue that the hyponymy relationship (entailment) alone cannot be the sole basis of the scalarity of expressions insertable into the *let alone* construction. This conclusion is based on observations like the following. Note the difference in the acceptability between (39a) and (39b). (The judgment is theirs.)

(39)   a.   He wasn't even a *commissioned officer,* let alone a *general.*

  b.   *He wasn't even a *commissioned officer,* let alone a *second lieutenant*

The explanation that FKO give to this difference is as follows. (39a) is likely to be used in a context where the speaker is expected to talk about the highest rank that a person held. In such contexts, the expressions *commissioned officer* and *general* can be regarded as representing the height of rank, since the general is the highest position among commissioned officers and hence (becoming) a general represents a higher value than (becoming) a commissioned officer. On the other hand, *second lieutenant* and *commissioned officer* cannot be regarded as such a scale: the second lieutenant is the lowest rank among commissioned officers, and hence (becoming) a second lieutenant cannot be regarded as representing a higher value than (becoming) a commissioned officer.

This means that ⟨*general, commissioned officer*⟩ is used in (39a) not because of the hyponymy relation but because of the rank difference they can involve. This does not mean, however, scales insertable in the *let alone* construction are subject to the Lexical Specificity Condition; the hyponymy relationship alone can be the basis for scalarity of items in the *let alone* construction if that is the scale relevant in the discourse. This is true of B's utterances in (40).

(40)   A: Isn't it Steve who owns a *spaniel*?

  B: He doesn't own a(ny) *dog,* let alone a *spaniel.*

Similarly, (39b) is in fact acceptable in context if what is being sought is a second lieutenant.

The *let alone* construction has a condition with respect to the values that W and S represent, which is the opposite of the condition the *if not* construction has. Although the assertion of any stronger proposition will suffice to assure that a weaker proposition holds, *let alone* sentences will have a stronger rhetorical force if W and S represent very different values. For this reason, (41a) sounds more natural than (41b).

(41)   a.   John didn't buy *eight* books, let alone *nine.*

  b.   John didn't buy *five* books, let alone *nine.*

5.   Conclusion

The above discussion shows that scale-sensitive constructions such as *in fact, if not* and *let alone* accommodate different sets of scales, which do not match the scales that license Quantity implicature. Therefore, these constructions are not good diagnostic tools for identifying Horn scales. This discrepancy is attributed to the different conditions which Horn scales and those insertable into the construc-

tions are subject to. A Horn scale must satisfy the Conversational Condition (Matsumoto (1995)) in the context in which it used, while expressions insertable into scale-sensitive constructions are not subject to it. Instead, each construction imposes additional conditions on the inserted expressions, which reflect the different functions to which these constructions are put. The *in fact* construction requires that a stronger proposition and a weaker proposition be compatible. The *if not* construction does not require such compatibility, and therefore accommodates non-Horn scales consisting of mutually exclusive terms. It instead requires that W and S be on the same level of lexical specificity and that W and S must be close in terms of the values on the scale that they represent. The *let alone* construction requires that a stronger proposition ('not W') and a weaker proposition ('not S') be compatible, and that W and S preferably not be very close in their values. Because of these additional conditions, implicature-licensing scales and scales insertable into scale-sensitive constructions do not involve the same set of scales.

NOTES

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[1] See Kay (1992) for *at least* and implicature.

[2] Also compare the following:
   (i)   Carl did not win a *silver,* let alone a *gold.*
   (ii)   Carl doesn't want a *bronze,* let alone a *silver*; he wouldn't settle for anything less
        than a gold.

[3] This sentence is unacceptable without *even* unless spoken in the following intonation (Bolinger, personal communication).

   (i)   John is ^{not} a ^{colo}nel, in ^{fact} $^{he\ is\ not}$ a $^{lieu^{te}}$ nant.

This appears to be attributable to the non-scalar nature of the two propositions involved; namely, (ii) and (iii).
   (ii)   John is not a *colonel*
   (iii)   John is not a *lieutenant.*

Unlike their affirmative counterparts, (ii) or (iii) does not tell you whether John is higher or lower than the rank named. The addition of *even,* which presupposes scalarity (Kay (1990)), makes (18b) interpretable as John being lower than lieutenant. The intonation given in (i) serves the same function.

In this respect *in fact* is somewhat different from *let alone,* which does not require such a supporting device for scalarity. It is possible to say (37a). One might say that *let alone* forces a scalar interpretation of the propositions involved, while *in fact* does not force it but presupposes it.

[4] Sadock's and Atlas's discussions are based on sentences in which *almost* modifies a VP rather than a quantifier. However, there is no apparent reason why their treatments of these two cases can be different.

[5] Note also that (i) is not so unacceptable. This sentence involves a reversed scale ⟨*not almos one hundred, not one hundred*⟩.

   (i)   ?John didn't meet *one hundred.* In fact he didn't meet even *almost one hundred.*

[6] There is *in fact* another possibility: some implicatures are not cancelable with the *in fac* construction and (19b) is not an implicature anyway. This possibility arises only when there ar

some real implicatures other than (20b) which cannot be canceled with the in *fact* construction. In the absence of such examples, I will not consider this possibility.

[7] For some reason, *just* in (20d) cannot be replaced by *only.*

(i)   He's not {just/≠only} a colonel, he's a general.

[8] Horn's and Atlas' discussions have centered on around examples in which *only* modifies an NP rather than a quantifier alone, but Horn (1989: 249-250) appears to believe that essentially the same analysis can be applied to the latter.

[9] *Only* differs in this respect from *at most.* Note the acceptability of (i).

(i)   ?John met *at most three.* In fact he met *fewer than three.*

[10] Note that the conjunction *and* is used in this reinforceability test. See Horn (1991) for a caution in using the conjunction *but* in this test.

[11] In this respect, *only n* is different from *n and only n,* with which it is often regarded as semantically synonymous (e.g., Van der Auwera (in press)). Note the unacceptability of (i).

(i)   *He wrote *five and only five* books, if not *fewer.*

[12] Suspending constructions in general accept these two scales. Note the case of *W, perhaps even S* below.

(i)   He must have hit *almost forty* home runs, perhaps even *forty.*

(ii)   He has written *only five* books, perhaps even *fewer.*

[13] Note that *exactly n* is neither upward entailing (or monotone increasing) nor downward entailing (or monotone decreasing) in the sense of Ladusaw (1980) (or Barwise and Cooper (1981)). Such items do not participate in Horn scales (Matsumoto (1995)).

[14] There is much more to the issue of *only* with respect to *let alone.* FKO claims that *let alone* can appear in a positive sentence with *only* appearing on the subject, as in (35), but it cannot when *only* appears elsewhere, as in (i).

(i)   *He only reached *Denver,* let alone *Chicago.*

They relate this to their observation that only a subject *only* can trigger negative polarity items (but see Linebarger (1987: 383), Progovac (1994: 73-75) for different formulations).

However, one needs to consider not only where *only* appears but also the positions or role of W and S in order to account for when *only* can license *let alone,* as the following sentences suggest.

(ii)   a.   Only the brightest can find *one* (at most), let alone *ten.*

b.   *Only *the brightest* can find one (at most), let alone *the mediocre.*

(iii)   a.   Even the brightest can find only *one,* let alone *ten.*

b.   *Even *the brightest* can find only one, let alone *the mediocre.*

These are only some of the complexities that need to be accounted for in a fuller analysis that goes beyond the scope of this paper.

[15] Linebarger's formulation of negative polarity licensing is notoriously unconstrained: it is not clear what exactly the limit to the utterances is that "imply" a negative proposition (Kadmon and Landman (1993)). In this respect, one might note that the Quantity implicature of a negative proposition does not seem to license negative polarity items. (2a), for example, can be used to implicate a negative proposition (2c), but a negative polarity item cannot appear in (2a). None of Linebarger's examples involve a negative Quantity implicature either. Negative polarity items appear to be able to occur only in sentences that logically entail or pragmatically presuppose a negative proposition. If this is true, then the conversational implicature analysis of negation implied by *almost* (mentioned in 2.2) can explain why (i) and (ii) are not acceptable (cf. FKO, p. 529).

(i)   *John almost reached Denver at all.

(ii)   *John almost reached *Denver,* let alone *Chicago.*

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