

ALMOST THERE: THE MEANING OF *almost*

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Abstract

Modifiability by *almost* has been used as a test for the quantificational force of a DP without stating the meaning of *almost* explicitly. The aim of this paper is to give a semantics for *almost* applying across categories and to evaluate the validity of the *almost* test as a diagnosis for universal quantifiers. It is argued that *almost* is similar to other cross-categorical modifiers such as *at least* or *exactly* in referring to alternatives ordered on a scale. I propose that *almost* evaluates alternatives in which the modified expression is replaced by a value close by on the corresponding Horn scale. It is shown that a semantics for *almost* that refers to scalar alternatives derives the correct truth conditions for *almost* and explains selectional restrictions. At the same time, taking the semantics of *almost* seriously invalidates the *almost* test as a simple diagnosis for the nature of quantifiers.

1 Background: The *almost* test

Modifiability by *almost* has been used in the literature as a test for the quantificational force of a DP. At the heart of this test lies the observation that universal quantifiers can be modified by *almost*, whereas existentials cannot:

- (1) a. Almost every student passed the exam.
b. *Almost a / some student passed the exam.

Consequently, so the argument goes, if some DP whose quantificational status is unclear can be modified by *almost*, it must have universal force. So (un)modifiability by *almost* has been used as an argument in the discussion of elements for which it is notoriously unclear whether they should be analysed as universals or existentials. Carlson (1981) was the first to use the *almost* test, applying it to distinguish between NPI *any* and Free Choice *any*. He argued that, since Free Choice *any*, but not NPI *any* can be modified by *almost*, the former is a universal quantifier, whereas the latter is an existential.

- (2) a. Almost any student can solve this problem set. Free Choice
b. *I didn't see almost any student. NPI

Subsequently, the *almost* test has also been used to help decide the nature of so called n-words in Negative Concord languages. Zanuttini (1991) used the fact that n-words can be modified by *almost*, as illustrated in (3), to argue that n-words are universal quantifiers interpreted with wide scope over negation, rather than existentials in the scope of negation.

- (3) Non ha detto quasi niente / *alcunché. (Italian, from Zanuttini, 1991)
not has said almost nothing / anything
'He said almost nothing.'

The validity of the *almost* test as a diagnosis for universal quantifiers has been questioned on empirical grounds (Partee 1986, Błaszczak 2001, Horn 2005). However, as long as the meaning

of *almost* is not explicitly stated and selectional restrictions derived from it, it remains unclear what *almost* is really sensitive to and whether the arguments based on modifiability by *almost* are valid.

The aim of this paper is to state a precise and general semantics for *almost* and evaluate the validity of *almost* as a diagnosis for universal quantifiers under this semantics. I will first critically review existing accounts of the semantics of *almost* by Sadock (1981) and Morzycki (2001), showing that neither is adequate because they do not account for the contribution the modified constituent makes to the semantic. I then go on to propose that this problem can be overcome if it is acknowledged that the semantics of *almost* is akin to that of focus-sensitive operators like *only*. A semantics for *almost* along these lines is spelled out in section 3 where I argue that *almost* refers to alternatives on a Horn scale and signifies that some alternative close by on the corresponding scale is true. Section 4 investigates the consequences of the proposed analysis of *almost* for the DP domain with particular focus on the elements to which the *almost* test has been applied, namely n-words in Negative Concord languages and NPI *any*. I conclude that (un)modifiability by *almost* does not constitute a valid test for the quantificational force of a quantifier.

2 Previous analyses of *almost*

2.1 Sadock (1981)

The first analysis of the semantics of *almost* is due to Sadock (1981). He defines *almost* as an intensional operator:

$$(4) \quad \llbracket \mathbf{almost} \rrbracket = \lambda w. \lambda p_{\langle st \rangle}. \exists w' [w' \text{ is not very different from } w \ \& \ p(w')]$$

Sadock further argues that an assertion of the form *almost* p is associated with the conversational implicature that p be false in the actual world. He derives this implicature via Grice's Maxim of quantity: since uttering *almost* p makes a weaker statement than uttering p (p being true in the actual world entails that there is a possible world in which p is true, but not vice versa), the hearer infers that the speaker does not believe p and thus assumes that p is false.

(5) Bill almost swam the English Channel.

So for example, the sentence in (5) asserts that there is a world not very different from the actual world in which Bill swam the English Channel, i.e. that if the actual world would be minimally different, Bill would indeed have swum the English Channel. At the same time, the use of *almost* leads to the implicature that Bill did not swim the English Channel.

However, the implicature that the proposition *almost* operates on is false is very hard to cancel (6a) and contrasts thus with other scalar implicatures, such as the inference from the use of *some* to *not all* in (6b):

- (6) a. ?Not only did Bill almost swim the English Channel, he did swim it.
b. Not only did Bill eat some of the cake, he ate all of it.

Since cancelability is a central property of implicatures, this indicates that the requirement that the proposition *almost* operates on be false, is part of the truth conditions rather than an implicature (see Hitzeman (1992) and Rapp and von Stechow (1999) for more arguments against the implicature approach).

There is another problem with the truth conditions Sadock (1981) assumes: As Morzycki (2001) points out, Sadock’s meaning rule in (4) might do for VP-modifying *almost*, but cannot directly be extended to DP-modifying *almost*. The problem is that it does not specify in which respect the world w' , in which the proposition p holds, is allowed to vary from the actual world. For example, whereas in the correct interpretation of (7a) the p -world varies with respect to the number of non-dry plants from the actual world, according to (4) it could also vary with respect to the degree of dryness, so that (7a) is wrongly predicted to be true if every plant is minimally moist. So according to (4), (7a) could be true in the same circumstances as (7b).

- (7) a. Almost every plant is dry.
- b. Every plant is almost dry.

2.2 Morzycki (2001)

Morzycki (2001) tries to remedy this problem by imposing a special requirement on DP-modifying *almost* that the worlds not vary with respect to the extension of the VP.

$$(8) \quad \llbracket \mathbf{almost}_{DP} \rrbracket = \lambda Q_{\langle \langle e, st \rangle, st \rangle} . \lambda P_{\langle e, st \rangle} . \lambda w . \neg Q(P)(w) \ \& \ \exists w' [Q(P)(w') \ \& \ \text{CLOSE}(w)(w')] \\ \ \& \ \lambda X . [P(X)(w)] = \lambda X . [P(X)(w')]$$

To illustrate how this addition makes sure that the p -world varies in the relevant respect and thus leads to the correct truth conditions for (7a), let us consider a toy model consisting of the two worlds w and w' and four individuals a, b, c, d . Let us assume that w' counts as close to the actual world w . Assume further that there are three plants in the actual world, a, b and c , and that c is the only plant that is not dry, thus preventing the proposition “that every plant is dry” from being true in w . Now, according to (8), the dry things in w' are the same as the dry things in w . Then the only way for w' to make “that every plant is dry” true is to assume that the “offending” plant c is not there in w' , such that there are only two plants in w' , a and b , and both of them are dry. This state of affairs is shown in (9).

(9)		plants	dry	individuals
	w	$a \ b \ c$	$a \ b \ d$	$a \ b \ c \ d$
	w'	$a \ b -$	$a \ b \ d$	$a \ b - d$

While Morzycki’s amendment to the meaning of *almost* modifying DP indeed ensures that the p -world varies in the relevant respect, it is itself problematic. First, the additional requirement he assumes for DP-modifying *almost* is nothing other than putting the desired result into the semantics by brute force. This also has the result that he has to assume a separate lexical entry for DP-modifying *almost*, and this runs counter to his claim of giving a unified cross-categorical semantics for *almost*. Further, the stipulation he makes derives wrong selectional restrictions. Morzycki derives the fact that existentials cannot be modified by *almost* from the requirement for DP-modifying *almost* that the worlds not vary with respect to the extension of the VP. He argues that existentials modified by *almost* are pragmatically odd, because they would require that something that is not in the NP-extension in the actual world be in the NP-extension in the p -world. For example, in the case of (10) something that is not a plant but dry in the actual world would have to be a plant in the world w' that makes “that some plant is dry” true. Such a state of affairs is again illustrated for our model in (11).

- (10) #Almost some plant is dry.

(11)		plants	dry	individuals
	w	a b	c d	a b c d
	w'	a b c	c d	a b c d

Since requiring that an individual changes an essential properties like being a plant across worlds is a very strange requirement, (11) is ruled out pragmatically. But according to this reasoning, negative quantifiers should also not be modifiable by *almost*, since they would require that something that is in the NP-extension in the actual world not be in the NP-extension in the p-world. To see this consider (12) and the state of affairs shown in (13).

(12) Almost no plant is dry.

(13)		plants	dry	individuals
	w	a b c	c d	a b c d
	w'	a b –	c d	a b c d

In (13), c is the “offending” plant, being dry and thus preventing “that no plant is dry” from being true in w. So c cannot be a plant in a world w' that makes this proposition true. But because of the requirement that the VP-extension not vary across worlds, c will be a dry thing in w' and therefore has to be part of w'. So c has to change from a plant in w to something that is not a plant in w'. In contrast to cases where *almost* modifies a universal quantifier we cannot simply assume that the “offending” individual does not exist in w' because it has to be in the VP extension in w'.

The discussion in this section shows that accounts by Sadock (1981) and Morzycki (2001) based on intensional similarity cannot do the job. The fundamental problem they face is that they do not account for the role the modified constituent plays in the semantics of *almost*.

3 The meaning of *almost*

So how can the contribution of the modified constituent be formalised while at the same time treating *almost* as a cross-categorial modifier? Although due to the focus of this paper, I concentrate on *almost* modifying DPs, it is important to keep in mind that *almost* can modify elements of various syntactic categories:

(14)	a.	John almost fell asleep during the talk.	VP
	b.	The victim was almost dead when the police found him.	AP
	c.	Almost every linguist has read ‘Syntactic Structures’.	DP
	d.	Bob almost never drinks alcohol.	AdvP

I think we the answer can be found if one considers work on other expressions that show a similar behaviour, namely focus sensitive operators like *only* and *even*. Rooth (1985) gives a cross-categorial semantics for these expressions that accounts for the semantic contribution of the focused constituent. He proposes that these operators take an additional argument besides the proposition they operate on. The second argument is a (contextually determined) alternative set C consisting of propositions in which the focused constituent is replaced by entities of the same semantic type.

But the semantics of *almost* has a further ingredient. As has been observed by Hitzeman (1992), *almost* operates on a scale. A sentence in which *almost* modifies an expression P entails the truth of a corresponding sentence without *almost* in which P is replaced by a value close by, but lower on the scale associated with P. For example, the sentence (15) entails that n people died of the

disease, with n being close to, but smaller than 100.

(15) Almost 100 people died of the disease.

This means that the semantics of *almost* involves a special type of alternatives, namely alternatives that are ordered on a scale. There are other expressions whose semantics has been argued to involve scalar alternatives, namely expressions such as *at least*, *at most* or *more than*. McNally (1998) and Krifka (1999) define a semantics for these expressions that is both cross-categorical following Rooth's (1985) semantics of *only* and involves alternatives ranked on a scale.

Krifka assumes that scalar alternatives can be introduced in two ways. First, scalar alternatives can be introduced in the same way as usual focus alternatives, i.e. by an intonationally marked focus. But intonational prominence is not necessary for the introduction of scalar alternatives, because certain expressions are automatically associated with alternatives ordered on a scale (see also Chierchia (2005)). These are expressions that are part of a so called Horn scale, i.e. a scale ordered by the entailment relation such that an element of the scale entails all the elements ranked lower (Horn 1972).

To ensure that the relevant alternatives are available at the level where they are evaluated, Krifka further assumes that the scalar ordering is projected along with the focus alternatives, so that the ranking of the alternatives having the type of the focus value carries over to the alternatives at the propositional level.

For the implementation of scalar alternatives, I follow Schwarz (2005) who assumes that operators evaluating scalar alternatives have a restrictor variable ranging over scales of propositions. In the case of *almost*, the relevant alternatives are the ones which are close by on the ordered scale. I will use \approx to signify the 'close by'-relation and as the corresponding restrictor variable. This leads to the following semantics for *almost*:¹

(16) $[[\mathbf{almost}_{\approx}]] = \lambda w. \lambda p_{\langle s, t \rangle}. \neg p(w) \ \& \ \exists q [q \approx p \ \& \ q(w)]$

Note that it is only required that the alternatives under consideration be close to p , but not that they are ranked lower than p . That only alternatives ranked lower can be true is ensured by the first conjunct in (16), which requires that p be false. Since p is logically entailed by alternatives ranked higher on a Horn scale, only alternatives ranked lower can be true.

To see how this semantics works, consider the sentence in (17a), in which the scale is given by the sequence of natural numbers. Let us assume for the sake of simplicity that the values that count as 'close by' are the ones within a deviation of 10% of the original value, i.e. the numbers between 90 and 110 in this case. The restrictor variable \approx then denotes the set of propositions in (17b). Applying the meaning of *almost* stated in (16) derives the truth conditions (17c), which in effect say that the number of people who died of the disease is somewhere between 90 and 99. This corresponds to the meaning the sentence (17a) intuitively has.

- (17) a. Almost 100 people died of the disease.
 b. $\{p \mid p = \text{that } n \text{ people died of the disease, } 90 \leq n \leq 110\}$
 c. $\neg(\text{100 people died of the disease}) \ \& \ n \text{ people died of the disease, } 90 \leq n \leq 110$

The occurrence of *almost* in a statement has a further consequence that becomes obvious when comparing the acceptability of (17a) to that of (18).

¹I do not want to commit myself regarding the status of the two conjuncts as presupposition, implicature or part of the truth conditions.

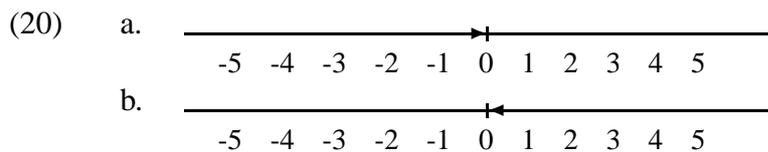
(18) #Almost 102 people died of the disease.

The combination of *almost* with round number words is fine, whereas *almost* combined with non-round number words sounds strange. This follows if we assume that *almost* also indicates that a more coarse-grained scale is used, similarly to the effect *approximately* has. Since the values on more coarse-grained scales correspond to round number words (Krifka t.a.), expressions that indicate a coarser granularity level show a strong preference for round number words.²

It is a general property of Horn scales that their direction is influenced by the utterance context (see Horn, 1972). We find this also with scales associated with *almost*, as the following example from Sadock (1981) illustrates:

(19) It's almost 0° Celsius.

The sentence in (19) can mean two things, depending of the situation in which it is uttered. In a situation in which it is already cold, it can mean that it is getting warmer and the temperature is approaching 0° Celsius from below. In this case, the direction of the temperature scale is the usual from bottom to top as shown in (20a). On the other hand, if (19) is uttered in a situation in which it is getting colder, it means that the temperature is actually still above 0° Celsius. In this case, the direction of the scale is reversed (20b).

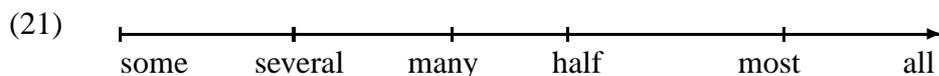


4 Implications for *almost* as a test

With the semantics of *almost* introduced in the last section at hand let us now see what we can say about the selectional restrictions *almost* exhibits in the DP domain.

4.1 *almost* and quantifiers

As argued for by Horn (1972), quantifiers form a scale ordered by entailment:



Considering this quantifier scale we can explain why certain quantifiers cannot be modified by *almost*. We observe that vague quantifiers such as *several*, *many* and *most* are incompatible with *almost*, while *half* and *all* are fine:

- (22) a. *Almost several / many / most students passed the exam.
 b. Almost half / all of the students passed the exam.

²This preference for round number words holds at least in the numerical domain, where the values on more coarse-grained scales correspond to multiples of the powers of ten. Things are different in the temporal domain, where the values on the minute scale for instance correspond to multiples of 15. This is reflected in the fact that *almost* is fine with these values on a minute scale:

- (i) I had to wait almost 45 minutes.

As argued by Hitzeman (1992), vague quantifiers do not correspond to precise values on the scale. Consequently it is not clear what part of the scale counts as ‘close by’, and so the semantics of *almost* is not compatible with vague quantifiers. In contrast, *half* and *all* have a precise location on the scale and are therefore fine with *almost*.

Furthermore, recall that existentials cannot be modified by *almost*:

(23) *Almost a / some student passed the exam.

This can be attributed to the fact that existentials form the bottom of the quantifier scale. There is thus no lower value which can be part of a proposition which is both a scalar alternative and true as required by the semantics of *almost*.

There are however cases in which *almost* is fine with existentials, such as the examples in (24):

- (24) a. It took me almost an hour to get here.
 b. King Penguins are almost a meter high.
 c. With this diet you can lose almost a pound of body fat per day.

In these cases, we are dealing with measure phrases that are associated with a dense scale. Because of the density of the scale, we can always find a value that makes a suitable scalar alternative for *almost*. In (24a) for example, there are values lower than one hour on the time scale, namely the fractions of one hour. Thus incompatibility of *almost* and existentials only holds in case of a discrete scale, where fractions of a unit are not possible.

4.2 n-words modified by *almost*

But does the fact that existentials (at least if associated with a discrete scale) cannot be combined with *almost* allow conclusions on the nature of n-words in Negative Concord languages? This is presupposed by Zanuttini (1991) who used the fact that n-words can be modified by *almost*, as illustrated in (25), as a crucial argument against the assumption that n-words are existential quantifiers that occur in the scope of negation (as argued for by Laka (1990) and Ladusaw (1992), a.o.).

(25) Non ha telefonato quasi nessuno. (Italian)
 not has called almost n-person
 ‘Almost nobody called.’

It is well known that the entailment relations are reversed under negation, leading to reversal of the direction of the corresponding Horn scale. Thus the quantifier scale in negative contexts looks like (26):

(26) Quantifier scale in negative contexts:



Under negation, existentials are at the top of the scale rather than at the bottom. This means that in negative contexts there are values lower on the scale than existentials which can be part of an alternative proposition that is true. Thus *almost* is not prevented from modifying existentials as long as they are in the scope of negation and *almost* operates on the negated proposition.

I will now show that the proposed semantics of *almost* in combination with the assumption that *nessuno* is an existential quantifier also derives the correct truth conditions by illustrating this

for the Italian sentence (25). The alternative values on the quantifier scale that count as ‘close by’ to the existential are quantifiers like *a few*, *a couple* and *several*. Assuming that *almost* is interpreted with wide scope over negation, the restrictor variable \approx denotes the following set of propositions:

- (27) {that it is not the case that a few people called,
that it is not the case that a couple of people called,
that it is not the case that several people called}
- (28) $\neg(\text{that it is not the case that somebody called}) \ \& \ \exists p [p \in \approx \ \& \ p]$

For (25) the proposed meaning of *almost* results in the truth conditions given in (28). In combination with the denotation of the alternative set \approx in (27), the truth conditions in effect say that somebody called, but it is not the case that more than a small number of people called. Again, this corresponds to the meaning (25) intuitively has.

Thus modifiability by *almost* does not help to decide the nature of n-words. As far as compatibility with *almost* is concerned, there is no difference between universal quantifiers interpreted with wide scope over negation and existential quantifiers interpreted in the scope of negation.

It is interesting to note that there is a parallel between existentials and possibility modals. While adjectives expressing modal possibility, corresponding to existential quantification over possible worlds, normally cannot be modified by *almost*, the negated forms of the adverbs are fine with *almost*:

- (29) a. *It is almost possible to get an appointment with the dean.
b. It is almost impossible to get an appointment with the dean.

In German, the positive form of the possibility adverb (*möglich*) can also be modified by *almost* if it is in the scope of the negative marker *nicht*:

- (30) a. *Es ist fast möglich einen Termin beim Dekan zu bekommen.
it is almost possible a appointment with.the dean to get
b. Es ist fast unmöglich einen Termin beim Dekan zu bekommen.
it is almost impossible a appointment with.the dean to get
c. Es ist fast nicht möglich einen Termin beim Dekan zu bekommen.
it is almost not possible a appointment with.the dean to get

So the facts concerning the compatibility of *almost* with adverbs of modal possibility confirm that existential quantifiers can be modified by *almost* as long as they are in the scope of negation.

4.3 Incompatibility of *almost* and NPIs

This leaves the question why *almost* cannot modify NPI *any*. Since NPI *any* in English is the incarnation of the existential determiner in negative contexts and as I have just argued, existentials in negative contexts are in principle compatible with *almost*, we would expect *any* to be fine with *almost*, contrary to what we find:

- (31) *I didn't see almost any student.

I believe that the incompatibility of *almost* and NPIs should be reduced to an intervention effect, which are known since Linebarger (1980) to arise in the licensing of NPIs.

In a recent paper, Beck (t.a.) gives a semantic analysis of intervention effects occurring in wh-questions that also extends to the question at hand. Beck argues that intervention effects are due to focus interpretation, or more generally the evaluation of alternative sets. An intervention effect occurs whenever an alternative evaluating operator interferes in the evaluation of another operator involving alternatives. She states this as the General Minimality Effect, which claims that for the evaluation of alternatives introduced by an XP another operator evaluating focus alternatives cannot be skipped. This excludes constellations of the form in (32), where the \sim operator (i.e. the operator evaluating focus alternatives defined by Rooth (1992)) intervenes in the evaluation of the alternatives introduced by XP_1 , because it prevents the alternatives introduced by XP_1 from being passed up to the position where they could be evaluated by Op_1 .

(32) $*[Op_1 \dots [\sim C [\dots XP_1 \dots]]]$

Beck (t.a.) proposes that intervention effects arising in the licensing of NPIs are also a form of the General Minimality Effect. Linebarger (1980) observed that (33a) does not have the reading (33b) where the universal quantifier takes scope in between the negation and the NPI:

- (33) a. I didn't always buy anything.
b. #It is not the case that I always bought a thing.

Beck's account of NPI intervention effects builds on the analyses by Krifka (1995) and Lahiri (1998) who argue that the licensing of NPIs involves the evaluation of focus alternatives. Adopting an analysis in the style of Lahiri (1998), according to which the focus alternatives introduced by an NPI are evaluated by an operator *even* taking wide scope with respect to negation, results in a LF-representation like (34) for the unavailable reading (33b) of (33a):

(34) $[even_D [\sim D [not [always [I bought [a thing]_F]]]]]$

Beck argues that quantificational elements are also associated with alternatives and thus intervene in focus evaluation. Thus (34) is an instance of (32) because the intervening quantifier *always* prevents the focus alternatives introduced by the NPI from being passed up to the position where they could be evaluated by *even*. Because *even* has no alternatives to operate on the representation (34) is ruled out.

Under this analysis of intervention effects in NPI licensing, *almost* is predicted to be an intervener. The semantics of *almost* I propose crucially involves the evaluation of alternatives. The combination of *almost* and NPIs thus leads to a constellation as (32), which is excluded by the General Minimality Effect. More precisely, *almost* and the implicit *even* associated with NPIs both operate on the same set of alternatives. I illustrate this for the sentence (35) that has two possible LF-representations, depending on the scopal ordering of *almost* and negation.

- (35) *I didn't see almost any student.

If *almost* is interpreted within the scope of negation we get the representation (36), where *almost* evaluates the alternatives introduced by the NPI *any student* and there are thus no alternatives left for *even*.

(36) $[even_D [\sim D [not [almost_C [\sim C [I saw [a student]_F]]]]]$

If we assume that *almost* takes wide scope with respect to negation (as we did in the case of n-words modified by *almost*) there are no alternatives for *almost* to evaluate, because the alternatives are already 'eaten up' by *even*:

tificational nature of the DP. In particular, taking the semantics of *almost* seriously invalidates the *almost* test as a diagnosis for universal quantifiers. There is more involved than just the quantificational force of the modified DP.

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