

POLARITY SENSITIVE ANY AND FREE CHOICE ANY

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1. INTRODUCTION

As is well known, any can function in two different ways. On the one hand, it can be a negative polarity item - we will call any on this use **polarity sensitive any** (PS); on the other hand it has, what is called, a 'free choice' interpretation - we will call any on this use **free choice any** (FC). In this paper, we will propose a unified analysis of the semantic and pragmatic effects of any, that is, an analysis which applies to any on both its PS and FC uses.

The use of any as a negative polarity item is illustrated in (1) and (2):

- (1) I don't have any potatoes.
- (2) *I have any potatoes.

Ladusaw 1979's well known analysis says that negative polarity items (NPIs) are only licensed if they are in the scope of a downward entailing operator. A downward entailing (DE) operator is an operator that reverses the entailment, roughly (using \Rightarrow for entailment):

- (3) O is a DE operator iff if $A \Rightarrow B$ then $O(B) \Rightarrow O(A)$.

Example (1) is OK on Ladusaw's account, because any is in the scope of negation which, as illustrated in (4), is a DE operator:

- (4) swim \Rightarrow move
I don't move \Rightarrow I don't swim

In example (2), any is not licensed, because there is no DE operator that any is in the scope of.

Ladusaw's analysis elegantly accounts for a wide range of examples, and improves upon previous accounts - which relied on the presence of a negation operator - in that the notion of DE also deals with cases without a negation, like (5)-(8).

- (5) At most three girls saw anything.
- (6) *At least three girls saw anything.
- (7) Every girl who saw anything was happy.
- (8) *Some girl who saw anything was happy.

Assuming, with Generalized Quantifier Theory, that determiners are two place relations between a nominal

property and a verbal property, Ladusaw predicts that (5) and (7) are OK because the determiner at most three is DE on both arguments, and the determiner every is DE on its first argument. (6) and (8) are out because at least three and some are not DE on either argument (in fact, both are upward entailing on both arguments).

While Ladusaw's analysis is generally quite successful, there are also some problems and questions. In the first place, there are various empirical problems. Linebarger 1987 discusses many such problems; we will only be able to comment upon a small selection of those in this paper. These empirical problems are generally of the following sorts:

(i) we find that sometimes NPIs fail to be licensed in a DE context (we will discuss the example of comparatives);

(ii) we find NPIs in contexts that seem not to be DE (we will discuss the case of adversative predicates);

(iii) We find NPIs in contexts where it is not clear how the notion of DE could be applied (we will discuss questions).

Secondly, there are two more theoretical issues that Ladusaw's theory does not address:

I. What is it about the meaning of NPIs that forces them to occur in certain contexts and not others?

What Ladusaw gives us is a description of the distribution of NPIs: the DE feature is a feature of the contexts in which the NPIs occur. As such it is quite successful. However, given that NPIs occur only in DE contexts, one may still want to know why that is so, i.e. why it is that NPIs are sensitive to this feature of the context, and how this sensitivity is related to the meaning of the NPI itself. We will suggest an answer to this question for the NPI any.

II. What is the connection between polarity sensitive any and free choice any?

(9) and (10) are examples of free choice any:

(9) You may take any apple.

(10) Any fool could tell you that.

The problem is this. Ladusaw 1979 offers a whole battery of arguments that show beyond doubt that PS any is an indefinite with an existential meaning. But FC any in (9) and (10) seems to have a universal meaning. And this goes beyond mere appearance. Carlson 1981 gives several arguments that FC any in fact is a universal quantifier. A strong argument is the behavior of almost. Almost is an operator that can modify only universal determiners, as shown in (11) to (13):

(11) Almost every fool can tell you that.

(12) Almost no fool can tell you that.

(13) *Almost some fool can tell you that.

As (14) and (15) show, almost can modify FC any but not PS any, arguing strongly that FC any, but not PS any, is universal.

- (14) Almost any fool can tell you that.
 (15) *I don't have almost any potatoes.

It seems then, that we should draw the conclusion (towards which Carlson 1981 leans) that any is lexically ambiguous: PS any is an existential quantifier, and FC any is a universal quantifier.

But there are also arguments that any is lexically unambiguous (some of which are discussed in Carlson's paper, see Carlson 1981 and references there). One very suggestive argument is that the existential/universal flip-flop that we observe in any has a parallel in a disjunction/conjunction flip-flop in or: in the same contexts where FC any is allowed, it is possible to interpret or as free choice disjunction: a disjunction with a conjunction meaning and the same feeling of 'choiciness':

- (16) You may take an apple or a pear.
 (17) Mary or Sue could tell you that.

and it seems unattractive to assume that or is lexically ambiguous as well, especially given the fact that, though not every language has something corresponding to any, free choice interpretations of disjunction do appear cross-linguistically.

In fact there is some further striking cross-linguistic evidence against the ambiguity hypothesis (and in fact in favor of the analysis that we will propose). In Hindi (Veneeta Srivastav, personal communication) there is a type of expression, kuch-bhi, koi-bhi, with the same meaning as any in English: in PS contexts these expressions have an existential meaning and behave like negative polarity items; in the contexts where in English we typically find FC any, they occur with a universal meaning. The interesting thing is that these expressions consist of a normal indefinite kuch (something), koi (someone) with the particle -bhi that brings in the any-effect.

We believe that any is unambiguous. But then we have to explain why it has two uses, and how it gets interpreted as an existential on one use and as a universal on another. Ladusaw himself admits that it is not clear how his analysis of PS any would help here. In this paper, we are going to propose an analysis of any which applies to it on both its uses.

2. OUR PROPOSALS

2.1. Widening.

We start with a central aspect of the semantics of any that is common to its polarity sensitive and free choice uses. Consider examples (18) and (19).

- (18) Every match I strike lights.
 (19) Any match I strike lights.

There are various subtle differences between (18) and (19). Some of these have to do with the 'choiciness' of (19): its feeling of 'it doesn't matter which', the fact that it applies to 'arbitrary matches' (we will have only little to say about this aspect, we intend to discuss it at length in a separate paper). Others have to do with the feeling that maybe in (19) it is more vague what exactly is quantified over (we will come back to this in the last section of this paper). In this section we are concerned with the following, third difference between (18) and (19): there is an intuition that (19) states more strongly than (18) does that (in some sense) there are no exceptions. (19) sounds like even marginal matches, ones you may not expect to light, do light when I strike them.

Now because of the mentioned other differences between every and any, this intuition is necessarily rather subtle (and we will spend a large part of the last section of this paper in determining exactly in what sense (19) states more strongly that there are no exceptions). Nevertheless, if one goes through the examples in the literature of FC and PS any, then this same intuition emerges case after case as one of the most prominent feelings about any: the examples with any, in comparison with related examples without any, express more prominently that there are no exceptions.

The comparison between (18) and (19) is useful to get a first grip on finding out in what sense any expresses this 'no exception' feature more strongly. Since there is universal quantification in both (18) and (19), the difference between (18) and (19) cannot lie simply in the quantificational force of every and any: already (18) does not allow any exceptions. Therefore, the stronger suggestion of 'no exceptions' in (19) can only mean that the quantification in (19) is over more objects than that in (18). It's over objects that include even marginal matches. In other words, the set of objects that satisfy the restriction match I strike is bigger in (19) than it is in the case of (18).

Let's consider (18). The context would normally select an interpretation for match I strike that excludes all sorts of matches, for example, used matches and wet matches. For that reason, you can accept (18) as true even if you don't think that wet matches will light. This is of course traditionally discussed in terms of domain selection: all quantification is restricted in the context

to a domain of relevant objects; the context selects a domain which does not contain irrelevant things like wet or used matches.

We think that the effect of any in (19) is to widen the contextually given domain of quantification, which it does by extending the interpretation of match I strike. With any, the extension of match I strike is extended to include matches that wouldn't normally be taken into account in the given context.

Take the following example. Suppose you state that if you take a dry match and strike it, it lights.

In such a context, I can support this statement from my own experience by saying (18): Yeah, right, every match I strike lights!. In this context, the domain of quantification of every match in (18) has been restricted to dry matches.

Suppose that in the same context, I say (19): Any match I strike lights!. While (18) is normally used to confirm your earlier statement (taking over the restricted domain of quantification), (19) rather seems to modify it: (19) would be interpreted as meaning that when I strike matches, they light, no matter whether they are wet or dry.

What the example illustrates is the following:

- (i) any indicates that the interpretation of match I strike is intended as wider;
- (ii) this widening is done along a particular contextual 'dimension', in this case, the dimension 'wet vs. dry'.

Given the dimension, (19) states that wet matches are no exception, that is, they are included in the domain of quantification. Note that in the same context, (19) does allow other kinds of matches to be exceptions, for example, used matches may continue to be legitimate exceptions: widening is usually not total, but restricted by a salient opposition in the context. This is what we call the dimension.

So, the first ingredient of our analysis is (A):

(A) WIDENING

In an NP of the form any CN, any widens the interpretation of the common noun phrase CN along a contextual dimension.

We believe that this widening is found with FC and PS any alike. In the next sections we will concentrate on PS any; we will return to FC any in the last section.

2.2. Any is an indefinite.

The literature provides strong evidence that PS any is existential (see especially Ladusaw 1979). We assume that an NP with any should be regarded semantically as an indefinite NP with some additional characteristics contributed by any. For example, any contributes widening. The NP with any has the usual semantic properties of an indefinite. We won't make a choice here concerning the

proper way of treating indefinite NPs. If indefinite NPs are best regarded as existential quantifiers, then so is the any NP; if indefinites are best treated as new variables (Heim 1982), then also the any NP is a new variable. From this assumption the existential behavior of PS any follows without problems. However, note that, since we will assume that any is not ambiguous, we will also treat FC any as an indefinite. We will show how this is compatible with the behavior of FC any in the last section.

Basically what we are assuming is that any CN is just the indefinite NP a CN with some additional features contributed by any.

This is the second ingredient of our analysis:

- (B) any CN = the corresponding indefinite NP a CN
with
additional semantic/pragmatic characteristics
(widening, strengthening) contributed by any

2.3. Strengthening.

Let us now come to the licensing of any. We have above made some assumptions about the meaning of any (any is an indefinite and induces widening), we will now make an assumption about the function of any. We propose the following. The function of any (and of NPIs in general) is to **strengthen** the statement that it occurs in. That is, the widening that any induces makes the statement it's in stronger than it would be without the widening. Also this aspect of any and NPIs jumps out as a very prominent feature if you go through the examples in the literature. We could say if John reads a newspaper, he reads the New York Times, but we say if John reads any newspaper, he reads the New York Times; we could say if you move I hit you, but we say if you budge an inch I hit you. In both cases, the use of the NPI strengthens the statement.

So we assume strengthening as a second feature of any. We define, for assertions, strengthening in terms of entailment. (As will become clear, this will make our strengthening requirement into a restricted form of downward entailment.) Strengthening, we assume, is a licensing feature of any. The point is this. We know that the meaning of any induces widening. The function of any is to make a stronger statement. We assume that any is only licensed in contexts where with the meaning that it has it can perform its function. Thus, any is licensed only if the widened statement strengthens the statement before widening, i.e. if the statement on the wider interpretation entails this same statement on the narrower interpretation.

This is the third ingredient of our analysis, we assume that a lexical property of any is a strengthening requirement:

(C) STRENGTHENING

any is licensed only if the widening that it induces creates a stronger statement, i.e. if:
 the statement on the wide interpretation \implies
 the statement on the narrow interpretation

Let us look at an example. Consider (21).

- (20) We don't have potatoes.
 (21) We don't have any potatoes.

It is clear that, at least if the any is emphatically stressed, we observe the same 'no exceptions' effect that we saw for FC any. (21) sounds stronger than (20), it sounds like we don't even have marginal potatoes. We conclude that PS any also induces widening. (We will assume that the same holds if any is destressed, although in the particular case of plurals under negation the difference is minimal (presumably because some is not an alternative here).)

Both (20) and (21) can be represented as something like (22).

- (22) $\neg \exists x [\text{Potato}(x) \ \& \ \text{We have}(x)]$

In context, we can understand 'potato' to mean 'cooking potato'. Then (22), and hence (20), will mean that we have no cooking potatoes. The effect of any is to widen the interpretation of 'potato', for example, to also include decorative potted potatoes. So (21) can mean that we don't even have potted potatoes.

Now if we check whether any is licensed in (22), we see that this is indeed the case, because the strengthening requirement is satisfied: the statement on the wide interpretation entails the statement on the narrow interpretation:

- wide: We don't have potatoes, cooking or other.
 \implies narrow: We don't have cooking potatoes.

Let us compare this with a case where any is not good:

- (23) *We have any potatoes.

We assume that the same widening is involved here. Now for strengthening we have to check the following pattern:

- wide: We have potatoes of SOME kind (cooking or other).
 $\neq \implies$ narrow: We have cooking potatoes.

We see that here strengthening is not satisfied, so indeed any is not licensed in (23).

Another example is (24).

- (24) Every man who has any matches is happy.

The effect of any is to widen the interpretation of matches, to include, say, wet matches. Obviously, this in turn widens the interpretation of man who has matches. The result is that every quantifies over men who have dry and wet matches alike. Clearly, this example satisfies strengthening: If every man who has matches on the wide interpretation is happy, it follows that every man who has matches on a narrower interpretation is happy.

This contrasts with (25).

(25) *Every boy has any potatoes.

Widening will not strengthen this statement: if every boy has potatoes of SOME kind, it does not follow that every boy has cooking potatoes. Hence any is not licensed.

2.4. Locality.

Our analysis has one more ingredient, a locality constraint, whose function (and the problems there are with it) we can here only indicate briefly.

We have mentioned that widening has to strengthen the statement that any is in. But what is the statement that any is in? We will follow Linebarger 1987 by assuming a locality constraint here:

(D) LOCALITY

Strengthening is to be satisfied by the 'local' proposition

Defining 'local' precisely is problematic. Roughly the idea is that the local proposition of any is the proposition at the level of the smallest operator that any is in the scope of. We think of this in terms of Heim 1982's notion of operator: Heim's operators are functions that create subordinated anaphoric domains, that is, things like universal quantifiers, negation, conditionals, propositional attitude verbs.

The main reason for this locality constraint is examples like (26):

(26) *It's not the case that every boy has any potatoes.

This example is generally regarded as infelicitous (also by Ladusaw 1983). However, Ladusaw's theory predicts that it is OK. Not only is any in scope of a DE operator (the negation), but even stronger, the whole context It's not the case that every boy--- is DE.

Given our locality constraint, strengthening has to be checked at the level of the local proposition. The smallest operator that any is in the scope of is every boy, so what has to be checked is whether every boy has any potatoes satisfies the strengthening requirement. This is (25), hence (26) is out for the same reason as (25).

The problems of locality are very subtle, and what we

have presented above is not more than a crude first stab at them. Let us mention one problem. Propositional attitude verbs are operators, but we have to assume that they are weaker operators than the other ones, in that sometimes, if the strengthening requirement is not satisfied at their level, the sentence may still be OK if strengthening is satisfied by the next operator up. The reason is that, though (27) is infelicitous (as predicted: at the level of admitted strengthening is not satisfied), (28) is OK:

- (27) *Everybody admitted that Bill had seen anything.
 (28) Nobody admitted that Bill had seen anything.

Finally, let us mention one more example where locality plays a role in our theory. Linebarger 1987 mentions examples like (29) as a problem for Ladusaw's theory:

- (29) Only people who had seen anything were questioned.

The problem is that only seems not to be DE on its first argument, as Linebarger observes:

Only people who have had a terrible disease know what suffering is.
 =/=>
 Only people who have had polio know what suffering is.

Now, part of the problem is the presuppositional part of only. Ladusaw 1979 argues that to check for the DE pattern, you should look at the semantic part of the meaning of the sentence, i.e. at the meaning minus its presuppositions. Thus (30) should semantically be represented as (31), with presupposition (32):

- (30) Only John came.
 (31) Everybody who isn't John didn't come.
 (32) John came.

Thus for (29) the DE pattern is only required to hold of its semantic representation (33):

- (33) $\forall x [\neg \text{saw}(x, \text{anything}) \rightarrow \neg \text{Questioned}(x)]$

The problem for Ladusaw is that (33) still is not DE (everybody who doesn't move doesn't come does not entail everybody who doesn't fly doesn't come).

With locality, the strengthening requirement is to be satisfied at the level of the smallest operator that any is in the scope of in (33), which is the negation: if x didn't see something in the wide domain, then surely x didn't see something in the narrow domain, so strengthening is satisfied and any is OK in (29).

2.5. Comparison with Ladusaw.

Our analysis of PS any is close to Ladusaw's. Like

Ladusaw, we claim that there is one uniform condition that constrains any. Also, our strengthening requirement is a requirement of an inference pattern that reverses the direction of entailment, like Ladusaw's DE. The difference is that we check for a particular instance of the DE pattern: the inference from the wide to the narrow interpretation of the same statement. Still, by and large, DE contexts are typically contexts in which our strengthening is satisfied.

However, there are also several differences between the two analyses. By positing widening and strengthening instead of DE, we achieve a number of things:

1. First of all, something that we see as central to our whole enterprise: our analysis does explain why it is that any should be licensed only in a certain kind of context. We have suggested a connection between the function and the semantic effect of any (the strengthening and widening) and the contexts in which any is licensed. Whereas Ladusaw's DE only captures the distribution of any, we present a rationale for this distribution based on the meaning and function of any: any occurs in these contexts because those are the only contexts in which it can both mean what it should mean (widening) and do what it should do (strengthening).

2. Our analysis accounts for the intuition that any suggests particularly strongly that there are no exceptions.

3. Our analysis also has empirical advantages concerning the distribution of any. This will be illustrated shortly.

4. We will argue that our analysis extends to FC any, and constitutes a unified analysis of any on its two uses.

In the next sections, we are going to show how we deal with a couple of problematic cases with PS any that are discussed in Linebarger 1987. We can only go through a few of Linebarger's problems. Moreover, though we think that Linebarger's own analysis runs in to very serious problems, we have no space here to compare our theory with hers. It is good to point out here that for most of the problem cases (the ones we discuss and the ones we don't discuss) the solution does not simply follow from our analysis. In most of Linebarger's examples there is interference with other factors, and our solution derives partly from our analysis, partly from specific features of the particular type of example.

3. MORE OFTEN

In this section we will briefly look at a case where any is unacceptable, though it occurs in a DE context. Consider Linebarger's (34):

(34) ?The sun rises more often than John visits any relatives.

The problem is that (34) is weird, although the context is

DE (as argued in Hoeksema 1983). Also on our theory strengthening is guaranteed, so any should be OK. Indeed, in the very similar example (35) (also from Linebarger) any is licensed. Why then is (34) weird?

(35) Cows fly more often than John visits any relatives.

We think that (34) sounds weird because it doesn't seem to make pragmatic or conversational sense.

Note first that (36), the counterpart of (34) without any, already sounds odd.

(36) ?The sun rises more often than John visits relatives.

Obviously, the reason is that it is not clear what the point would be of saying such a thing: the sun rises quite often, so (36) is unlikely to provide relevant information about whether John visits relatives often or seldom.

Now it seems that the sentences sound even worse with the any. We think that with the idea of widening, we have the means of explaining this fact. We think that the any makes (34) particularly strange because it's very hard to imagine how the widening induced by any would make pragmatic sense here.

When does widening make sense pragmatically? For example, in (35): The point of this sentence is that John visits relatives very seldom, in fact, never. Here widening makes sense: The use of widening on the word relatives indicates that we are lenient about what counts as a relative. One might have thought that if you are lenient enough, you'd be able to adopt the view that John visits relatives often. The speaker is saying that that is not the case: no matter how lenient we are about what counts as a relative, John still doesn't visit relatives.

Similar reasoning does not work with (34). As we said before, this sentence doesn't tell us if John visit relative often or seldom. Therefore, what's the point of trying to be lenient? No view is expressed about the frequency of visits, so no view could be changed by taking a lenient approach.

So the point we can make here is this: Because our analysis specifies what it is that any does, it allows us to identify and explain examples where any sounds odd because there is no pragmatic sense to doing what any is supposed to do.

4. SORRY AND GLAD

As noted in the literature, adversative predicates like surprised and sorry license NPIs, contrasting with predicates like sure and glad. This is illustrated in (37) and (38).

- (37) I'm surprised/sorry that he ever said anything.
 (38) *I'm sure/glad that I ever met him.
 *I'm sure/glad I said anything.

Are the adversative predicates DE? Take surprised - does (39) entail (40)?

- (39) I'm surprised he bought a car. Honda ==> car
 (40) I'm surprised he bought a Honda.

We have to be careful: as in the earlier case of only, surprised has a factive presupposition, which interferes with the entailment judgments. Ladusaw assumes that the DE pattern should hold of the sentence minus its factive presupposition. So what we have to check is whether (39) entails (40) on the assumption that he bought a Honda. Linebarger argues that even so, (39) does not logically entail (40): it is possible that the fact of him buying a car is surprising, but, given that he is buying a car, the choice of car is not. Linebarger discusses the possibility that a weaker relation, 'psychological DE', does hold, but she concludes that such a relation would fail to distinguish surprised from glad: i.e. either both surprised and glad or neither are 'psychologically DE'.

There are then two related questions to answer:
 (i) Why do adversative predicates license NPIs?
 (ii) How do they differ from predicates like glad?

To this we wish to add the following problem:
 (iii) Glad does in some cases license NPIs. For example, in (41).

- (41) A: But these tickets are terrible!
 B: Be glad we got ANY tickets!

We believe, with Linebarger, that neither sorry nor glad is generally, or logically, DE, or strengthening. If you just look at their logical properties, neither one is going to satisfy strengthening. We will argue that the licensing of any under these predicates depends on extra factors which create the required strengthening.

We start with the adversative predicates. Without getting into details, we just note the following: When you try to find a difference in the DE behavior of glad and sorry, you often get the impression that maybe there is some kind of slippery intuition that sorry is 'more DE' than glad. At the same time, we agree with Linebarger that when you start looking 'logically' at the DE pattern, you can't seem to find any difference between sorry and glad. We will propose an explanation for this.

Consider example (42).

- (42) I'm sorry that anybody hates me.

Consider the widening that any induces here. The context would give us a relevant set of people that count as 'somebody'. For example, 'semanticists'. Any widens this

set, so that more people count as 'somebody'. For example, linguists in general.

Given this widening, (42) (the wide interpretation) says what is expressed in (a): I'm sorry that the set of linguists who hate me is non-empty.

(a) sorry that: $\{x : \text{Linguist who hates me}(x)\} \neq \emptyset$ WIDE

Now, it seems in some sense to be part of the meaning of sorry that if I am sorry that a set is not empty, then I want that set to be empty. With this, from (a) we can conclude (b).

(b) want that: $\{x : \text{Linguist who hates me}(x)\} = \emptyset$

But I cannot want a set to be empty without wanting all its subsets to be empty. One of these subsets is the set of semanticists, so we get (c).

(c) want that: $\{x : \text{Semanticist who hates me}(x)\} = \emptyset$

Using once more the relation between sorry and want, this means that I should be sorry if the last set is not empty, so we get (d).

(d) sorry that: $\{x : \text{Semanticist who hates me}(x)\} \neq \emptyset$
NARROW

But (d) is the narrow interpretation, so with use of this argument (42) satisfies strengthening after all: from the wide interpretation in (a) we can infer the narrow interpretation in (d).

Recall the slippery intuition that sorry is somehow DE. We think that when you judge sorry to be DE, you do that because of the reasoning that we just went through. We propose that sorry licenses any because, based on this reasoning, sorry is taken to satisfy strengthening.

When we look at glad, we see that the same kind of reasoning cannot create a DE pattern here. Take (43). Given the same widening as before, (43) says (e).

(43) *I'm glad I saw anybody.

(e) glad that: $\{x : \text{Linguist that I saw}(x)\} \neq \emptyset$

Also for glad there is a connection between glad and want, but this time a positive one: (e) implies (f).

(f) want that: $\{x : \text{Linguist that I saw}(x)\} \neq \emptyset$

But wanting a set to have members does not entail that you want each particular subset to have members: So no entailment from the wide set to the narrow set goes through. This explains why glad differs from sorry and does not freely license NPIs.

Now that we have created a difference between sorry and glad, we have to explain why in special cases like (41) any

is licensed under glad. Look again at (41) and a similar example (44).

- (41) A: But these tickets are terrible!
 B: Be glad we got ANY tickets!
 (44) I'm glad ANYBODY likes me!

We assume that glad is not DE, and we know that it does not freely license NPIs. Then why is any licensed in (41) and (44)?

There is an additional fact to be explained: Examples like (41-B) and (44) have a negative implicature. (41-B) suggests that we didn't get any decent tickets; (44) suggests that nobody who really counts likes me. And this implicature is not an unrelated phenomenon, because without it, any is not licensed in (41) and (44).

Let us concentrate on (44). In general, there is no guarantee that this example satisfies strengthening. Suppose as before that the set of people that count as 'somebody' is widened from semanticists to linguists:

- wide : I'm glad that some linguist likes me.
 =/> narrow: I 'm glad that some semanticist likes me.

Then, as we argued before, strengthening doesn't hold: There is no guarantee that my being glad that somebody in the wider set likes me entails that I am glad that somebody in the narrow set likes me. I can be glad that there are linguists who like me while preferring not to be liked by any semanticist.

Now let us ask: under what circumstances would strengthening be guaranteed? Suppose that the narrow interpretation, the smaller set includes all and only the people whose liking me would make me glad enough to count in the given context and that any widens this set, to also include people that would not make me glad: i.e. the following context:

- (45) narrow: the people who count as 'somebody' =
 all and only the people whose liking me would
 make me glad enough to count
 wide: also includes people whose liking me would
 not make me glad enough to count

In this context strengthening is guaranteed: (44) on the wide interpretation entails (44) on the narrow interpretation (apart from the factive presupposition). Why? Because if it makes me glad that somebody who is 'less gladdening' likes me, it follows that it would make me glad if somebody 'more gladdening' liked me. Therefore, if the interpretation is chosen in this particular way, any is licensed.

Now, we're only halfway through the problem, but let us make one observation here. In the case of example (44), the selection of contextual domain (45) is very natural given the linguistic context: given glad I'd - for

normal contextual reasons - not include in the domain of the 'somebodies' irrelevant people, people that wouldn't gladden me anyhow. The fact that this choice of context is so natural for glad plays a central role in the licensing of (44). For instance, if we substitute in (44) an otherwise similar predicate sure, the same argument would not work. The choice of the narrow set as the set of all and only the people about whose liking me I would be sure enough for them to count is ridiculous. That is, though it is perfectly natural to assume that in I am glad that somebody likes me, somebody means somebody that would make me glad enough, it is ridiculous to assume that in I'm sure that somebody likes me, somebody means somebody that would make me sure enough. There just doesn't seem to be any point to the latter domain selection. So this choice of context would not work for sure, and (46) is not licensed:

(46) *I'm sure ANYBODY likes me!

Coming back to (44), we have argued that strengthening is satisfied in the context given, but we run into a problem of a different sort now: after widening, (44) now means that I'm glad that someone likes me in a wide set, which we got by adding people whose liking me would not make me glad enough to count. This is problematic. Presumably glad means glad enough to count in the present context. But the added persons are such that I cannot be glad enough about any of them for them to count. So it seems that the widening we have here couldn't possibly add anybody that I could be glad about. So this widening should be pointless. The problem, thus, is that even though technically strengthening is satisfied, the use of any would be pragmatically pointless, so (44) should still be out for that reason.

Why isn't it pointless? We think that there is another factor involved which eliminates this problem.

We note that there is a strong similarity in meaning between sentences like (41-B) and (44) and the reading of (B) in (47).

(47) A: Couldn't you get any tickets better than this!?
B: I'm glad we even got THESE tickets!

(47-B) says something like this: These tickets are not ones that you would expect me to be glad about, but in fact I am glad about them. We suggest that what is going on is the following. Associated with the sentence is a scale that orders tickets with respect to how glad they would make us. On the intended reading of (47-B), even indicates something about the location of 'these tickets' with respect to the gladdening scale. Even implies the following:

- (i) 'these tickets' are normally not on the gladdening scale (or they have a negative value on it);
- (ii) we are now being told to reset our standards for getting glad about tickets, so that even these tickets get

a positive value on the gladdening scale.

We think that example (44) involves the same kind of resetting of standards. We are told to reset our standards for gladdening so that even the people whose liking me wouldn't normally gladden me now get a positive value on the gladdening scale.

So what we think is going on is this: besides its standard neutral interpretation, glad can sometimes have an implicit 'even'-quality, where the 'even' tells us to reset our standards. Any is allowed only when glad has this 'even'-quality.

Note that this 'even'-quality of glad is possible also when there is no any involved, as in (48):

- (48) I know, he should have apologized, but you know how he is, I'm glad he SPEAKS to me.

Furthermore, note that any is not allowed when glad doesn't have an 'even'-quality, which is for instance the case when it has an 'at least'-quality, as in (49):

- (49) *I'm glad that at least we got ANY tickets.

In our example (44) glad has an 'even'-quality; the resetting of standards that this induces does away with the problem we mentioned before. Although the people added by the effect of any are not 'gladdening enough' by our usual standards, they do become gladdening enough when we reset our standards. So the added persons' liking me can make me glad after all and (44) is informative after all.

Also, the resetting of standards accounts for the fact that (44) has (to have) a negative implicature. (44) implicates that nobody likes me who would normally count as sufficiently gladdening. The reason for that is that if somebody did like me who would normally count as sufficiently gladdening, then there would be no point in resetting the standards for gladdening. So any requires an 'even'-quality; this 'even'-quality requires the implicature, so indeed, we not only account for the fact that the implicature is there, but also for the fact that it has to be there for any to be licensed.

To summarize, we have explained the difference between glad and sorry, as well as the existence and special flavor of examples where glad licenses any. As announced earlier, the solution of the problems involved with glad and sorry does not follow straightforwardly from our analysis of any. Nor should it, because, as we have indicated, various features of context are involved in the particular examples that show up in other phenomena that have to be accounted for as well, like certain implicatures. Note, however, that our general analysis of any does play a central role in the explanations: the account of the licensing of any under glad is based on the widening idea, as it involves specific choices of the narrower and wider sets.

5. QUESTIONS

As is well known, questions license NPIs, as in (50).

(50) Does Sue have any potatoes?

But it is not clear in what sense questions are DE. Take the standard notion of entailment between questions which is given in (51) (see, e.g. Karttunen 1977, Groenendijk and Stokhof 1982):

(51) Question A entails question B iff every true answer to A entails a true answer to B.

Given this notion, questions are not DE. Look at questions (52) and (54). (52) can be answered by (53), without this providing an answer to (54). So (52) doesn't entail (54) - so we don't see a DE pattern here. Why is it then that questions license NPIs?

(52) Who moves?

run ==> move

(53) John, Bill and Sue are the ones who move.

(54) Who runs?

Before we answer this, we note another point about the facts. It is stated in the literature that questions with NPIs are associated with an expectation that the answer be negative, i.e. a question like (50) is asked when it is expected that Sue doesn't have potatoes. We would like to refine this observation. We think that the expectation associated with (50) is not that Sue doesn't have any potatoes whatsoever. Rather, the expectation is that Sue doesn't have potatoes within the set that potatoes would normally refer to in the given context. For example, if in the present context potatoes would normally mean 'cooking potatoes', then the negative expectation (or negative suggestion) is that Sue doesn't have cooking potatoes.

Now the analysis. According to our analysis of any, what (50) means is the question expressed by (55), plus widening and strengthening.

(55) Does Sue have potatoes?

Any widens the interpretation of potatoes, for example from cooking potatoes only to both cooking and decorative potatoes.

To be licensed, any has to satisfy strengthening. The strengthening requirement is a requirement that a certain relation hold between the unit that contains any on a narrow interpretation and the same unit on a wide interpretation. In the case of declaratives, the narrow reading has to be **entailed** by the wide reading. The idea behind this is, of course, that the wider statement should provide more information than the narrow statement. We think that in the case of questions, strengthening should be based on an inverse relation: the stronger question is

the one that asks more information. Of course, we have to state what it means to ask more information. We will base our definition on a very weak relation between questions (i.e. not a partial order), that however does form a real comparative relation (a partial order) between the question-pairs that we are interested in (questions that ask the same thing about a set and an superset); this relation is given in (56):

- (56) Q' strengthens Q iff when question Q is already answered, question Q' is still unanswered.

Given this, the strengthening requirement takes the following form for questions:

- (57) any is licensed in a question only if when the question on the narrow interpretation is already answered, the question on the wide interpretation is still open.

Now look at (50) - why is any licensed here? If we just look at (50) itself, we see that it does not satisfy the requirement in (57). If question (55) on the narrower interpretation is answered positively, then the question on the wider interpretation is already answered as well. If Sue has cooking potatoes, then of course she has cooking or decorative potatoes.

This is where the negative expectation or suggestion comes in. If the context contains the assumption that the question on the narrower interpretation has a **negative** answer, then even given this answer to this question, the question on the wider interpretation is still unanswered. If Sue doesn't have cooking potatoes, it is still not known whether she has cooking or decorative potatoes. We see then that the requirement in (57) is only satisfied in contexts where the question on the narrower interpretation is assumed to have a negative answer.

To summarize, we have proposed a relation between questions which plays the same role that entailment played in the case of declaratives. This relation allows us to explain why any is licensed in questions, and why it must be accompanied there by a negative expectation or suggestion.

Let us make one more remark here. In questions, this negative implication can at times be very weak, up to non-existence, as in the standard question by an attentive shop-attendant:

- (58) Is there anything I can do for you?

We think that this is a consequence of conventionalization. If it has become conventionalized to ask a question in a certain form in a certain kind of situation, then that situation may be sufficient to license that question, even without its original implicatures. Yet, even in (58), the negative implicature has not completely disappeared: (58)

is a more polite question than (59)

(59) Is there something I can do for you?

and this politeness is explained by the negative implicature. To exaggerate a bit, in asking (58) it is as if the speaker says: 'I know that I won't be able to help you with your real problems, but maybe, besides that, there is some small issue that I may be able to help you with.'

6. FREE CHOICE ANY

6.1. The proposal.

We start by noting some central properties of FC any.

1. FC any behaves like a universal quantifier. This seems clear from simply considering the meaning of example (60). Example (61) shows that any can be modified by almost, just like the true universal quantifiers every and no.

(60) Any owl hunts mice.

(61) Almost any owl hunts mice.

2. FC any is in certain ways similar to generic indefinites. Carlson 1981 observes that the contexts where FC any is allowed are to a large extent typically the same contexts where generics are allowed. Also, FC any, like generics, has a modal nature: statements like (60) are 'law-like', in that they have counterfactual entailments. (60) entails roughly that if you were an owl, you would hunt mice.

We take the similarity with generics very seriously, and propose the following analysis of FC any.

We would like to claim that the analysis of any that was presented in section 2 applies exactly as it is to examples with FC any. The NP with any is an indefinite NP with widening and strengthening. We propose that FC any is what you get when the indefinite NP is interpreted generically:

Free choice any CN = the corresponding indefinite NP
(a CN) interpreted generically
+ widening and strengthening

6.2. Generics.

We are claiming that a FC any NP is a generic NP. So we have to make some assumptions about generics. Two aspects of the semantics of generics are relevant here:

(62) An owl hunts mice.

1. Generics allow exceptions. For example, sentence (62) can be true even in a situation where there are, say, baby owls that don't hunt mice.

2. The modal, 'law-like' nature of generics: Generic statements have counterfactual entailments. For example, (62) entails roughly that if you were an owl (and not an exception) you would hunt mice.

We won't say much about the modal nature of generics here. We think that determining its exact nature is crucial for the understanding of many aspects of the semantics of FC any and we want to deal with it in a separate paper. For the present paper, we will just assume that the quantification involved in generics is modal quantification. On the other hand, we do want to focus on the issue of exceptions. This is of course a central issue in the semantics of generics: How can you specify the truth conditions for generics in such a way that the quantification is sort of universal but nevertheless allows exceptions? We are well aware that we cannot in the space of this section solve the central problem of generics. Rather we want to make some minimal suggestions, that, to us, seem compatible with several approaches to generics, like for instance, non-monotonic analyses like circumscription.

Consider example (62). We assume that generics like an owl are formed from the normal indefinite with a generic operator. However, we take this generic operator to be basically a (modal) universal quantifier. We suggest, furthermore, that this quantifier is restricted by a contextually given set of properties, properties which determine, roughly, what sort of owls example (62) is about. One can think about them as the properties that 'normal' owls, or 'standard' owls, or just 'owls that count for the present purposes' have. So we propose that (62) is interpreted as something like (63), where X_{owl} is this set of contextually given properties.

$$(63) \quad \forall x \sim X_{owl} [Owl(x) \rightarrow Hunt\ mice(x)]$$

(63) means something like this: For every possible object which has all the properties in X_{owl} , if it's an owl, it hunts mice.

(63) accounts for the intuition that certain owls that don't hunt mice may be regarded not as refuting (62), but rather as legitimate exceptions. For example, if ADULT is one of the properties in X_{owl} , then the quantification is over adult owls only, and a baby owl that doesn't hunt mice would not refute the statement.

But this cannot be the whole story. If the variable X_{owl} simply gets as its value from the context an actual set of properties, then that would mean that generic quantification is just contextually restricted universal quantification. This can't be right, since all quantification is restricted in this way, and this would fail to explain why generics differ from regular universal quantifiers with respect to tolerating exceptions. So we

need a further assumption.

What we would like to claim is that it is part of the nature of the generic that the value of X_{owl} is deliberately left vague (and the vagueness of X_{owl} induces vagueness in the truth conditions of the generic statement). The context does not tell you what the properties are that are the members of this set.

We think that this fits the intuition about generics. We think that when you use a generic, you are not trying to be precise. It's not supposed to be clear to your hearers exactly what owls are supposed to actually hunt mice.

In our view, if you say an owl hunts mice, that's just like saying 'every owl with the right properties hunts mice', while, crucially, not committing yourself to what the right properties are. You are not just saying that there are some properties and you don't know what they are: the vagueness is an integral part of what you say. In short, we claim that (62) means something like (64).

- (64) 'all normal owls hunt mice',
where what counts as normal is inherently vague.

Note that we are not claiming that (62) should be reanalyzed in terms of the meaning of the sentence all normal owls hunt mice: the latter is a normal universal sentence, which does not have the vagueness that we are talking about: although the adjective normal may be vague, a speaker uttering the latter sentence may be taken to commit herself to some way of making it precise; in the generic statement there is no such commitment. This is what we mean when we say that the vagueness is an integral part of the utterance.

To summarize: Generic statements allow exceptions in a way that regular universal statements do not. We have sketched an analysis that attributes this feature to inherent vagueness in the generic quantification.

6.3. Generics are not universal.

We will argue now that this exception-allowing vagueness explains the fact illustrated in (65), namely, that generics cannot be modified by almost, because they are not universal.

- (65) *Almost an owl hunts mice.

The quantifiers that can be modified by almost are the universal ones, like every and no. Universal quantifiers can be defined as the quantifiers that do not allow exceptions, in the sense given in (66).

- (66) A generalized quantifier $Q(A)$ does not allow exceptions iff for any B and for any d in A , d is either a confirming instance or a refuting instance for the statement $Q(A)(B)$.

For instance, every owl does not allow exceptions in the sense of (66): If an owl is an owl that hunts mice, it is a confirming instance of the statement every owl hunts mice, if it is an owl that doesn't hunt mice, it refutes the statement. So every is a true universal, and that's why we can say almost every owl. The same holds for no owl. On the other hand some owl, for example, does allow exceptions in the sense of (66): an owl that doesn't hunt mice is not a confirming instance, but neither a refuting instance for the statement Some owl hunts mice, and that's why we cannot say almost some owl.

Generics allow exceptions in the sense of (66). Take the statement an owl hunts mice and a sick owl d that doesn't hunt mice. It is possible that d neither confirms nor refutes the statement. This owl certainly is no confirmation. Now is it a counterexample? Not necessarily. Take the vague set X of properties that define normality for owls. It may very well be possible to make X more precise in such a way that it will include the property HEALTHY. This means that stating the vague generalization 'an owl hunts mice' may very well allow for the possibility that it's supposed to apply to healthy owls only. Since this is possible, our sick owl need not count as a counterexample.

To sum up, generics allow exceptions in the sense of (66), so they are not true universals, so they are not compatible with almost.

6.4. Licensing of FC any.

We now return to any and to example (60). We have proposed that any owl is just an owl with widening and strengthening. It follows that (60) has the same representation as (62), but with widening applied to it.

$$(63) \quad \forall x \sim X_{owl} [Owl(x) \rightarrow Hunt\ mice(x)]$$

Widening might be along the dimension 'healthy vs. sick'. If someone has said that a healthy owl hunts mice, you can respond with ANY owl hunts mice, meaning that healthy and sick owls alike hunt mice. Let us call the widened interpretation of owl 'owl, healthy or sick'.

Before we go into the details of widening and strengthening, let us briefly summarize what we've got now. Our analysis of FC any, reduces the difference between PS and FC any to the difference between non-generic and generic indefinites. This analysis allows for a unified treatment of any in its two uses, as an element that contributes widening and strengthening. In addition, it accounts for the properties of FC any which it shares with regular generic indefinites: being sort of universal, being modal, occurring in the same contexts.

What is left to do is to see why FC any is licensed, and to complete our account of those properties of FC any that it does not share with generics.

We return to the widening process. In the representation in (63), the predicate owl occurs twice: once in the antecedent of the conditional, and once as an index on the vague set X. Widening will have to apply to both occurrences, so the result of widening can be represented as in (67).

$$(67) \quad \forall x \sim X_{\text{owl, healthy or sick}} [\text{owl, healthy or sick}(x) \rightarrow \text{hm}(x)]$$

Thus crucially, in the case of FC any, widening gives us a new contextual vague set of properties. How does this new set differ from the old one? Before widening, the vague set was the set of properties that define normality for owls. At that point, it was possible that the property HEALTHY was one of the properties in X, or that on some precisification of the vague X, HEALTHY would turn out to be one of the properties in it. After widening, we get the set of properties that define normality for the predicate 'owl, healthy or sick'. Clearly, it should not be possible for HEALTHY to turn out to be one of the properties in this new set, because normality for sick and healthy owls alike should not be restricted to healthy owls only. Rather, normality should now be compatible with being sick. Therefore, we propose the definition in (68).

$$(68) \quad X_{\text{owl, healthy or sick}} \text{ is the result of minimally changing } X_{\text{owl}} \text{ so as to make both HEALTHY and SICK compatible with it and with its precisifications.}$$

Given this, it is clear that $X_{\text{owl, healthy or sick}}$ and its precisifications can't contain HEALTHY.

Let us summarize: Before widening, it was still possible for HEALTHY to be in X or in its precisifications. Widening makes SICK compatible with X and its precisifications, which means that if HEALTHY was in there, after widening it must be taken out.

We can now consider the licensing of FC any. We note that any is OK in (60), because strengthening is satisfied. The interpretations of (60) before and after widening are roughly as in (69), and the required entailment clearly holds.

$$(69) \quad \text{wide: Every owl (healthy or sick) with the 'normality' properties (which are compatible with HEALTHY and with SICK) hunts mice.} \\ \Rightarrow \text{narrow: Every owl with the 'normality' properties (which include perhaps HEALTHY) hunts mice.}$$

6.5. Any is a quantifier that is universal along a dimension.

We continue with the effect of widening. Consider again the sick owl that doesn't hunt mice. Before widening, our sick owl can constitute a legitimate exception to (60),

because of the possibility that HEALTHY is one of the properties in X_{owl} . After widening, it is guaranteed that HEALTHY is not in X_{owl} or its precisifications. So it is no longer possible that only healthy owls are supposed to hunt mice. Now, does this mean that our sick owl automatically ceases to be a legitimate exception and becomes a counterexample?

Well, no. It is still possible that our owl has some other property that makes it exceptional, for example being very young. Yet one thing has changed: Being sick can no longer be the reason why our owl is a legitimate exception. Again: after widening, our sick owl may happen to be a legitimate exception, but not because it is sick.

We describe this situation by saying that after widening, the generic quantifier does not allow exceptions along the dimension 'healthy vs. sick'. We mean by this that the quantifier does not allow an owl to be an exception just because it is sick (or healthy, for that matter). This is the case if the property HEALTHY is irrelevant for the truth of the generic statement.

The property HEALTHY is irrelevant for the truth of the generic statement if the following holds: if the statement is true with HEALTHY being one of the properties determining normality for owls, it stays true if we remove HEALTHY. If that is the case, then the truth of the statement could not have had anything to do with the property HEALTHY. This is made precise in (70):

(70) A vague quantifier $Q \sim X_A$ (A) allows no exceptions along the dimension $\langle H \text{ vs. } S \rangle$ iff

for any B and any precisification $p(X_A)$ of X_A such that H is in $p(X_A)$ or S is in $p(X_A)$,

if $Q \sim p(X_A)$ (A)(B) then $Q \sim p(X_{A, H \text{ or } S})$ (A)(B).

What follows, thus, is that the effect of widening on the generic quantifier is to turn it into a quantifier which allows no exceptions along a certain dimension, the dimension associated with the corresponding any. This is the sense in which any owl is universal: it is universal along the associated dimension healthy vs. sick.

This fits very well with our intuitions about the effect of FC any (for instance, the 'no exceptions' feature), and also explains the compatibility of FC any with almost.

The natural generalization of almost to vague quantification is:

(71) Almost is an operator that turns a quantifier that allows no exceptions, or no exceptions along its associated dimension into a quantifier that allows almost no exceptions, or almost no exceptions along its associated dimension.

Given this, it follows that although almost does not apply to generic indefinites, it does apply to FC any.

To summarize: we have made the assumption that FC any is a generic indefinite with widening and strengthening. We have made some assumptions about generic indefinites and we have given some details about how widening operates in the case of FC any. We have argued that on this account strengthening is satisfied, so we have shown why FC any is licensed. In the case of FC any widening does not just concern the interpretation of the common noun, but also of the contextually given set of properties. This analysis accounts for the properties of FC any that distinguish it both from PS any and from regular generics: The universality of FC-any comes from the generic operator and from the effect of widening: the combined effect is that FC any does not allow exceptions along its dimension. This effect in turn explains the compatibility of FC any with almost.

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