

LICENSING ANY IN NON-NEGATIVE/NON-MODAL CONTEXTS

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ABSTRACT

In a recent analysis, Kadmon and Landman (1993) propose that *any* is univocally an indefinite. It has free choice (FC) readings in modal contexts where indefinites get universal force and negative polarity (NPI) readings in negative contexts. It is barred from non-negative/non-modal contexts by a licensing principle that requires statements with *any* to *strengthen* statements with ordinary indefinites. In this paper I show that FC readings of *any* are available in non-modal (and non-negative) contexts if there is a relative clause inside the NP and argue that *any* must be recognized as a universal. A consequence of this is that *strengthening* can no longer be used to explain the distribution of *any*. The alternative proposed here is that *any* is an inherently modal particle and signals lack of commitment with respect to the existence of individuals in its domain. It cannot occur in non-negative/non-modal contexts because the existence of such individuals is entailed. A relative clause over-rides this constraint by carving out a possibly empty subset of the individuals denoted by the head noun. The interaction of semantic and pragmatic factors is shown to account for hitherto unexplained facts about the distribution and behavior of *any* in a variety of contexts.

I: THE PROBLEM OF UNIVOCAL ANY

1.1. "Any" as Universal

Analyses of English *any* have focused on its distribution and chameleon like interpretation. It is well-documented that it is licensed in negative, more generally, downward entailing, contexts and in the presence of modals. The basic generalizations can be illustrated by the examples in (1) and (2):¹

- (1)a. John didn't talk to any woman.
b. Any owl can hunt mice.
c. Any owl hunts mice.
- (2)a. * John talked to any woman.
b. * Any man didn't eat dinner.
c. * Any woman contributed to the fund.

Closely related to the distribution of *any*, is the question of its interpretation. The generalization based on the canonical cases given in (1) above, is that it is interpreted as a narrow scope existential or a wide scope universal when it occurs in downward entailing contexts such as (1a) (*PS any*); as a wide scope universal when it occurs in a modal context as in (1b) and (1c) (*FC any*). The question that has dogged analyses of the phenomenon since the very beginning is whether there are two lexical items that happen to be homophonous or whether there is only one item which behaves differently depending on the context.

A univocal account proposed by Quine (1960), Vendler (1967), Lasnik (1972), Kroch (1974), LeGrand (1975) and Eisner (1994) takes *any* to be a universal taking scope over negation and modal operators. Apart from the fact that the particular scope properties of *any* remain unaccounted for, there is convincing evidence that *PS any* must be an existential.² (3a) from Carlson (1980), for example, has only a *de dicto* reading. If *any* were a universal that must take scope over negation, an unambiguously *de re* reading would be predicted. (3b) from Ladusaw (1979), on the other hand, is ambiguous between universal and existential readings (*Is it possible for each person to pledge ATO?* vs. *Is it possible for some person to pledge ATO?*). An ordinary universal or indefinite would each have one reading. (3c), attributed by Lee and Horn (1994) to Sabine Iatridou, shows that *any* allows donkey anaphora and this aligns it, once again, with indefinites:

- (3)a. Bob does not think that there is anyone from Greece in his basement.
b. Can anyone pledge ATO?
c. If any farmer owns a donkey, he beats it.

The examples in (3) show that *any* cannot be equated with a wide scope universal, suggesting that it must be lexically ambiguous. Ladusaw (1979) and Carlson (1980) explicitly argue for this and Horn (1972) inclines towards this view.

What makes such a conclusion somewhat unsatisfying, however, is the fact that the paradigm in (1), (2) and (3) is quite common across languages. There are items in languages such as Hindi (Davison 1978, Dayal 1995), Basque (Laka 1990) or Japanese (Kawashima 1994), to name a few, that display the same pattern of behavior. A univocal account would be preferable since it seems implausible to posit homophony for all languages with items similar to *any*.

1.2. "Any" as Indefinite

Following on the analysis of quantificational variability of ordinary indefinites in Lewis (1975), Kamp (1981) and Heim (1982), Kadmon and Landman (1993) argue quite persuasively for a univocal account of *any* as indefinite. According to them, *any* is an indefinite which gets interpreted as universal in precisely those contexts where ordinary indefinites have a generic interpretation. A similar position is also taken by Lee and Horn (1994). Here

I focus primarily on K&L's approach, the key features of which are given below:

- (4) (A) any CN = the corresponding indefinite NP + additional semantic/pragmatic characteristics (i.e. widening and strengthening) contributed by *any*.
The sole difference between PS *any* and FC *any* lies in the interpretation of the indefinite NP: in the case of FC *any*, it is an indefinite interpreted generically.
- (B) Widening: In an NP of the form *any* CN, *any* widens the interpretation of the common noun phrase along a contextual dimension.
- (C) Strengthening: *Any* is licensed only if the widening that it induces creates a stronger statement. That is, only if the statement with *any* CN entails the corresponding statement with *a* CN.

Though this approach is extremely appealing, I want to revive the question of *any* being a universal by drawing attention to the data in (5), which are parallel to (2). The only difference is the presence of a relative clause:

- (5)a. John talked to any woman who came up to him.
b. Any man who saw the fly in the food didn't eat dinner.
c. Any woman who heard the news contributed to the fund.

Licensing of *any* by relative clauses has been discussed in LeGrand (1975) under the term *subtriggering*, as well as by Davison (1980) and Carlson (1981).³ However, it has not featured in any significant way in recent literature.

Subtriggered *any* has a FC reading and passes Horn's and Carlson's diagnostics of taking modifiers that only universal determiners take, namely *almost* and *absolutely*, and of allowing for exception phrases:

- (6)a. John talked to almost/absolutely any woman who came up to him.
b. John talked to any woman who came up to him except Sue.

What is interesting about the FC reading of subtriggered *any* is that it cannot be an instance of a generic indefinite. An indefinite in the same position does not have universal force, as shown in (7):

- (7)a. John talked to a/some woman who came up to him.
b. A/some man who saw the fly in the food didn't eat dinner.
c. A/some woman who heard the news contributed to the fund.

The closest equivalents of the sentences in (5) are the corresponding sentences with a universal, given in (8):

- (8)a. John talked to every woman who came up to him.
b. Every man who saw the fly in the food didn't eat dinner.
c. Every woman who heard the news contributed to the fund.

The subtriggering cases show quite clearly that it is not possible to reduce all FC readings of *any* to the presence of an NP external generic operator. K&L's attempt to assimilate the universal to the existential thus cannot be maintained.

1.3. A Quasi Univocal Account

If the universal quantificational force of at least some FC readings of *any* is NP internal, we have to recognize that NP's with *any* can be universals. Given the facts in (3), however, one cannot reasonably hope to assimilate all cases of *any* to the universal but neither would one want to revert to the view that there are two unrelated *any*'s in the language. The proposal I want to make here is that there is only one morphological item which can attach to universals or to indefinites. The shifts in interpretation follow from the fact that its host NP can be universal or indefinite, its non-standard distribution from the interaction of its inherent meaning with the meaning of the rest of the sentence and the context of use. Since this is, in a sense, a univocal account of the phenomenon the similarity in distribution and interpretation of items similar to *any* in other languages is not unexpected.

The approach I am advancing is clearly in the spirit of K&L in that it decomposes an NP with *any* into two parts, a host NP and the semantic/pragmatic contribution of *any*. I have demonstrated in section 1.2 the need to modify their proposal to allow *any* to attach to universals. This seemingly minor change, however, leads to a non-trivial reassessment of the semantic/pragmatic properties of *any*. Let us illustrate with (5a).

Suppose the context is one where John is a candidate and is at a meeting where he wants to appear likeable to the female voters, maybe because the latest polls have shown him to be unpopular with them. A likely domain of quantification in this context may well be contextually restricted to female voters. (8a) would then describe a situation in which John talked to every woman voter who came up to him. If women who are not citizens came up to him, it would say nothing about whether John talked to them or not. (5a) could indicate some widening of the domain so that John might be claimed to have talked to even foreign women. Nationality would be one of the possible dimensions along which widening could take place though, of course, not the only one. This is not an implausible account of our intuitive understanding of the difference between (8a) and (5a), though later we will refine this somewhat.

Now, this account of the acceptability of *any* in (5a) is only viable if it can be shown that its presence strengthens the corresponding sentence with *every*. Of course, if John talked to every member of the union of the set of women voters and the set of foreign women, it follows that he talked to every member of each subset. Thus *strengthening* is satisfied and *any* is predicted to be licensed. The

problem, however, is that by similar reasoning (2a) *John talked to any woman* should also license *any*. For now, it can be compared not only to *John talked to a woman* where widening does not result in strengthening but also to *John talked to every woman* where it does. Thus, extending the K&L analysis to include universals robs it of its explanation for the distribution of *any*, one of its strongest features.⁴

In this paper I will advance the view that *any* is an inherently modal element, which indicates that quantification is over possible instantiations of nominalized properties as opposed to quantification over actual individuals.⁵ I propose a semantic constraint on its occurrence which I dub *non-existence*. It says that an occurrence of $[_{NP}any \beta]$ in a statement ϕ is licit iff it does not entail $\exists\beta\phi$. This, of course, still allows *any* to occur in statements that in particular situations have individuals verifying ϕ . In these cases, *any* is acceptable iff it satisfies a pragmatic requirement of *contextual vagueness*. This says that *any* is only appropriate in contexts where the speaker cannot identify the individual or individuals who verify ϕ .

In advancing this proposal I will begin by focusing on subtriggered *any* in non-negative/non-modal contexts in order to isolate its core properties. I will then show how *non-existence* and *contextual vagueness* predict the distribution and behavior of *any* in a variety of contexts. The range of data covered include some facts that have been noted but not explained in earlier accounts: and some that may be new.

II: SEMANTIC CHARACTERISTICS OF SUBTRIGGERED ANY

2.1. Property-loaded Relative Clauses

In demonstrating how strengthening applies to universal *any* I made the standard assumption that the denotation of a common noun modified by a relative clause is simply the intersection of the sets denoted independently by the common noun and the relative clause. But this view of noun modification is not fine-grained enough to capture some crucial distinctions relevant to subtriggering. We begin to get a better sense of what is at issue when we compare relative clauses that modify NP's with *any* with those that modify NP's with *every*.

The first insight into subtriggering is provided by sentences such as (9a). This sentence is ambiguous between a reading in which membership in the set denoted by the relative clause is accidental and one in which it is essential to the truth of the statement being made:

- (9)a. Every student who is in Mary's class is working on polarity items.
 b. It happens to be true of every student who is in Mary's class that he/she is working on polarity items. (accidental)
 c. Every student in Mary's class, by virtue of being in her class, is working on polarity items. (essential)

Note that the distinction in question is not between restrictive and non-restrictive/appositive uses of the relative clause. Both are instances of restrictive relativization; the universal determiner cannot take appositives, and there is no intonation break surrounding the relative clause.

Now, not every universal modified by a relative clause has this ambiguity. Consider (10a) and (10b) which lend themselves to an accidental interpretation of the relative clause:

- (10)a. Every student (who is) in Mary's class happened to vote Republican.
 b. Every woman standing under that tree is Mary's friend.

(11a)-(11b), on the other hand, are most naturally interpreted with membership in the relative clause as being essential:

- (11)a. The President thanked every soldier who had fought in the Gulf War.
 b. Everybody who attended last week's huge rally signed the petition.

One way of isolating the essential reading is to add the phrase *whoever they may be* after the modified noun phrase; its meaning seems compatible only with that of the essential reading. Another diagnostic is to preface the statement with *we didn't keep a list of the individuals...* These additions are easily incorporated into (11), as shown in (13). Incorporating them into (10), to the extent that it is even possible, has a semantic impact. In (12a) the choice of *happen to* seems to signal disbelief that the main clause event was a coincidence. In the case of (12b), the addition is odd because it seems to call for an essential connection between the property of standing under a tree and the property of being Mary's friend.

- (12)a.# Every student (who is) in Mary's class, whoever they were, happened to vote Republican.
 b.# Every woman standing under that tree, whoever she may be, is Mary's friend.
 (13)a. We didn't keep a list of the names, but the President thanked every soldier who had fought in the Gulf War.
 b. Everybody who attended last week's huge rally, whoever they were, signed the petition.

Thus one can safely take the distinction between accidental and essential uses of the relative clause to be real and also take the sentences in (10) to involve primarily the first reading, and the sentences in (11) to involve primarily the latter reading.

Now, a clue to the semantics of *any* is revealed when we replace the universal in these sentences with *any*. The sentences in (14) substitute *any* for *every* in (10) and appear odd in precisely the same way that they appeared odd when we added *whoever they may be* in (12). *Any* substituted into (11), on the

other hand, is entirely natural. (15) is parallel to (13):

- (14)a.# Any student (who is) in Mary's class happened to vote Republican.
b.# Any woman standing under that tree is Mary's friend.

- (15)a. The President thanked any soldier who had fought in the Gulf War.
b. Anybody who attended last week's huge rally signed the petition.

The generalization that emerges from this is that subtriggered *any* is compatible only with the essential reading of the trigger, i.e. the relative clause, while subtriggered *every* has no such restrictions.

One way of thinking of this difference is in terms of Property Theory of Chierchia (1984). Here predicative expressions are systematically related to their individual level correlates via a nominalization operator and nominalized properties can be turned back into predicative expressions.

- (16)a. Fido is a mammal = mammal'(f).
b. Mammals are smart = smart'(∩mammal)

A crucial aspect of this theory, for our purposes, is that although $\cup \cap P \leftrightarrow P$ valid, the theory distinguishes between them. The two terms are extensionally equivalent but differ in the mode of presentation.

The standard semantics for relative clause formation treats the *wh* element like a lambda abstractor over an open proposition, yielding a set of individuals - an ordinary predicative expression. This would correspond to the accidental interpretation of the relative clause. On the other hand, if this predicative expression undergoes nominalization, it would represent the essential use of the relative clause. This would yield the representations in (17) for (9):

- (17)a. every(λz [student'(z) & λx [in Mary's class'(x)](z)]) (work on polarity')
b. every(λz [student'(z) & $\cup \cap \lambda x$ [in Mary's class'(x)](z)]) (work on polarity')

In (17a), the determiner *every* takes as its first argument the intersection of two predicative expressions. In (17b), it takes that subset of the set denoted by the head whose members instantiate the nominalization denoted by the relative clause. The truth conditions of the (17a) and (17b) are identical and the context being extensional, they are both verified with respect to the same individuals. There is still a difference in the mode of presentation; the first is individual-loaded while the second is property-loaded. That is, the statement in (17a) is based on observation of individuals concerned, the particular predicates chosen simply help identify the individuals. Any extensionally equivalent expression would work as well. The statement in (17b) makes crucial use of the property in question and the substitution of equiextensional properties would not be meaning preserving.

To illustrate this point, suppose that Mary is teaching a seminar in semantics as well as a course on Field Methods. It so happens that all the advanced students are enrolled in both courses. Writing a paper on polarity items

could be an essential property of Mary's students in the semantics seminar, but an accidental property of her students in field methods. Either version of (18) is true, and crucially the same individuals verify the truth of the statement. We can substitute *who is in Mary's Semantics seminar* with the equiextensional property *who is in Mary's Fields Methods course* because we can switch between a property-loaded statement (one which uses the relative clause in an essential way) to an individual-loaded statement (one which uses the relative clause in an accidental way).

- (18) Everybody who is in Mary's semantics seminar/Field Methods course is writing a paper on polarity items.

Based on our demonstration in (14) and (15) that *any* is compatible only with the essential use of the relative clause we predict that in the scenario described above, (19a) would be appropriate, modulo one qualification that will be introduced in the next subsection. But it would not be appropriate to make the substitution and say (19b) because a statement with *any* does not have the option of switching to an individual-loaded statement.

- (19)a. Anybody who is in Mary's semantics seminar is writing a paper on polarity items.
b.* Anybody who is in Mary's Fields Methods course is writing a paper on polarity items.

2.2. Subtriggering and Discourse

Focusing still on the relation between *any* and a universal NP as its host, consider the sentences in (20)-(21) which reveal differences between them having to do with their relation to discourse referents. Here the domain of the universal quantifier in the second clause is the set of individuals introduced explicitly in the first sentence. In each case, *every* is acceptable but *any* is not:

- (20)a. There were several/20 students at the lecture and every student who was there said it was inspiring.
b.* There were several/20 students at the lecture and any student who was there said it was inspiring.
- (21)a. We have many graduate students but this year the graduate director met with every student in the graduate program individually to discuss their progress.
b.* We have many graduate students but this year the graduate director met with any student in the graduate program individually to discuss their progress.

It may be worth pointing out that it is not the case that the sentences with *every* can take discourse antecedents only under the accidental reading of the relative

clause. This can be shown by prefacing such a sentence with a phrase that shows an essential use of the relative clause:

- (22)a. There were too many students at the meeting for me to keep track of them, but every student who was there raised his/her hand in favor of the motion.
 b.* There were too many students at the meeting for me to keep track of them, but any student who was there raised his/her hand in favor of the motion.

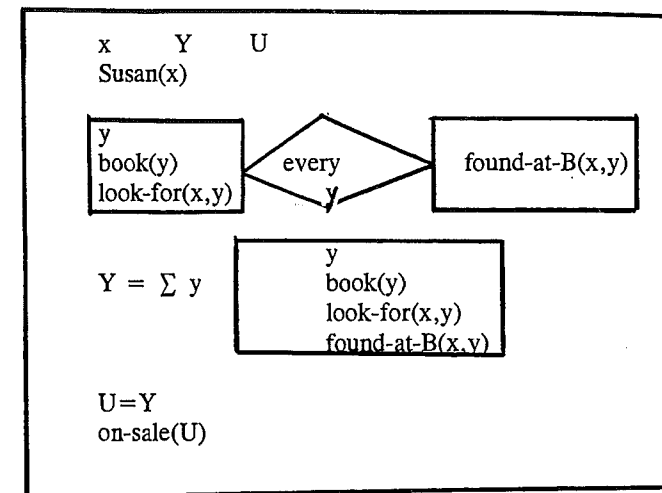
Thus, these examples show that statements with *any* differ not only from individual-loaded statements with *every*, but also from property-loaded statements with *every*. *Any* cannot have a discourse antecedent, or to put it another way, the domain of quantification for *any* cannot be contextually specified.

Next consider contexts in which there is discourse anaphora in the second sentence to a preceding universal. Again, this is possible with *every* but not with *any*:⁶

- (23)a. Susan found every book she had been looking for at Borders. And what's more, they were on sale!
 b.* Susan found any book she had been looking for at Borders. And what's more, they were on sale!
- (24)a. Paul has interviewed every student who was at the scene of the crime and Kate has interviewed them too.
 b.* Paul has interviewed any student who was at the scene of the crime and Kate has interviewed them too.
- (25)a. (I don't know who they are but) Paul is trying to find every student who was at the scene of the crime and Kate is trying to find them too.
 b.* Paul is trying to find any student who was at the scene of crime and Kate is trying to find them too.

The unacceptability of the (b) versions of (23) through (25) can also be reduced to the constraint against the domain of quantification being contextually specified. As Kamp and Ryle (1993) explicate, plural discourse anaphora is dependent on a process of abstraction, which essentially collects every individual who satisfies the conditions in the complex NP and forms a set of those individuals. This set then becomes available for subsequent discourse anaphora. In the case of (23a), for example, a set would be created and made available at the matrix level whose members would be the individuals that are books and that Susan had been looking for and found at Borders:

(23)a'.



Abstraction presupposes that a finite, specifiable set of such individuals exists. Since quantification in natural language is contextually restricted, it comes as no surprise that abstraction is possible in the case of a statement with *every*. The fact that abstraction is not possible in the case of a statement with *any* tells us that its domain crucially differs in not being contextually specifiable. Note once again that this is not a difference between individual-loaded statements with *every* vs. property-loaded statements with *any*. (25) can take the phrase *whoever they are* so that it needn't be an individual-loaded statement but the version with *every* is perfectly acceptable.

2.3. Iterability of Eventuality Described

Finally, statements with *every* and *any* differ in the interpretation of the eventualities they describe. Consider (26) where matrix and embedded verbs are both non-stative:

- (26)a. That evening John misbehaved with everybody/anybody he talked to.
 b. John talked to everybody/anybody who came up to him at the party.

Though both terms are acceptable, the statement with *any* suggests that there were several events of the relevant kind, while the statement with *every* is neutral in this regard. This difference can be better seen in (27). In (27a) there is only one event of offering and *any* is ruled out, but (27b) is compatible with several such events and *any* is acceptable:

- (27)a. Bill offered Mary everything/*anything he had cooked for dinner.
 b. Those days Bill offered Mary everything/anything he cooked.

Both terms allow a matrix verb to be non-stative and the embedded verb to be stative, with the expected difference in interpretation between the two. Consider (28):

- (28)a. John made a fool of himself in front of everyone/ anyone who was there.
b. Mary sang for everyone/anyone who wanted to hear her.

(28a) with *any* seems to suggest that there were several instances of John making a fool of himself while with *every* he need only have behaved foolishly once. Similarly, (28b) with *any* leads us to expect that Mary sang several times but not so with *every*. This is further confirmed by examples like (29) where iteration of the event denoted by the main clause verb seems implausible and the acceptability of *any* is reduced:

- (29)a. John slipped in front of everyone/*anyone who was there.
b. At 4 p.m. I saw John lecturing to everyone/*anyone who was near him.

Next consider the combination of a stative in the matrix and a non-stative in the embedded clause. In (30a) *any* is acceptable under an interpretation for *know*, where with each encounter it became evident that John possessed that knowledge. Similarly, in (30b) *any* calls for several events of objects being placed in front of John and him expressing his liking for it. This is not so with *every*:

- (30)a. John knew every/any language that we encountered on our trip.
b. John liked everything/anything that was placed before him.

What seems to be happening is that though the matrix verb is non-iterative, it is able to ride piggy back on the iterability of the embedded predicate.

I should point out that the iteration of events we are looking at is not due to a need for universal *any* to take wide scope with respect to some other operator (here presumably an event operator). (31) shows that *any* can take narrow scope, contrary to what is sometimes assumed about FC *any*:

- (31) Every student_i read any book on giraffes they_i could find.

If the pronoun inside the relative clause is read as bound by *every student*, the statement can only be about possibly different groups of books per student.

Although there seems to be a tendency for the eventuality described to be interpreted as iterative, this is not necessary. (15a), for example, could be prefaced to ensure that there is a single event of thanking:

- (32) At the end of his speech, the president thanked any soldier who had fought in the gulf war.

The generalization that emerges is that iterability of the event denoted by the matrix verb is sufficient to license subtriggered *any* and this iterability can be parasitic on the iterability of the event denoted by the embedded verb. But it is not a necessary condition for the licensing of *any*.

2.4. Prenominal vs. Postnominal Modification

We have determined so far that subtriggered *any* denotes a subset of the set denoted by the head noun, namely that subset whose members instantiate the property denoted by the relative clause. Crucially, the relative clause is interpreted in its essential use and the resulting subset is not contextually identifiable. While we have been looking primarily at modification by relative clauses, subtriggering is acceptable with other postnominal modification too, as shown in (33a). Interestingly, however, prenominal modification does not support *any* (Greg Carlson p.c.), as shown by the contrast between (33b)-(33c):⁷

- (33)a. John talked to any woman at the party.
b. John talked to any politician who is powerful.
c.* John talked to any powerful politician.

Bolinger (1967) argues that prenominal adjectives do not derive from predicative adjectives while postnominal adjectives do. He also claims that prenominal adjectives only express permanent properties, not those with a temporal spread. He bases these conclusions on the observation that a sentence like (34a) refers to a river that is characteristically navigable, while one like (34b) refers to a river that is temporarily navigable. Similarly, (35a) refers to people who are characteristically responsible while (35b) refers to people who are responsible for a particular act:

- (34)a. The navigable rivers are to the north.
b. The rivers navigable are to the north.
(35)a. The responsible people were punished.
b. The people responsible were punished.

In a similar vein, Sadler and Arnold (1994) argue that prenominal modification is quasi-lexical, syntactic or morphological compounding at X⁰ level, while post-nominal modification is phrasal. As they put it, (34a) has a single compound property while (34b) has two separate properties.

These insights, for present purposes, may be translated in the following way. Relative clauses are predicative expressions that can undergo nominalization. The resulting property-loaded interpretation of the modified noun phrase is crucial for licensing *any*. Prenominal adjectives would be expected to undergo nominalization too if they were predicative expressions, yielding a similar result for *any*. If we follow Bolinger and Sadler and Arnold in not taking them to be predicative expressions, they must be predicate modifiers. According

to Chierchia (1984), natural language does not nominalize predicate modifiers. Thus the modified common noun that *any* has scope over in (33c) denotes a single property and has the same status as an unmodified common noun as far as licensing *any* goes. The contrast between (33b) and (33c) is parallel to the contrast we started out with, namely that between (5a) and (2a).

III: DISTRIBUTION AND BEHAVIOR OF ANY

3.1. *Non-Existence and Contextual Vagueness*

We have now a better sense of the properties of subtriggered *any* and can turn to the task of explaining its distribution and behavior. The view I am proposing is that *any* is inherently modal in that it signals lack of commitment to the existence of individuals instantiating the property in question. In this I am echoing Vendler (1967) who said that complete verifiability is repugnant to an *any* proposition. Here I will show how *non-existence* and *contextual vagueness* operate. To recap, the first bars *any* from occurring in statements that entail the existence of individuals verifying the statement. In statements that lack this entailment, *any* can occur if the context of use makes clear that the speaker does not have direct knowledge of the relevant individuals.

Let us begin with the contrast that had proved elusive for K&L's approach, repeated below. We focus here on universal *any*. Since this is an extensional context, indefinite *any* would assert existence whether there is noun modification or not and would straightforwardly be ruled out as violating *non-existence*:

- (36)a. * John talked to any woman.
b. John talked to any woman who came up to him.

The explanation I suggest for this contrast turns on the view that universal quantification in natural language differs from universal quantification in predicate logic in presupposing a non-empty domain of quantification, a view that von Stechow (1994) traces back to Aristotle. Chierchia and McConnell-Ginet (1990) show that this is a presupposition and not an entailment since it is possible to deny existence without contradiction. Interestingly, the examples they use to illustrate this all involve relative clause modification.

It seems, however, that in extensional contexts modified and unmodified NPs differ with respect to this test. Speakers note a significant contrast between (37a), which may require some backtracking but is not contradictory, and (37b), which is contradictory:

- (37)a. Mary read every book assigned last semester. Since there were no books assigned she read nothing.
b. Mary read every book. Since there were no books she read nothing.

I will therefore adopt the view that in extensional contexts, the felicitous use of a universally quantified statement entails the existence of individuals satisfying the head noun but not of individuals satisfying the head noun and the relative clause.

3.2. *Extensional Contexts*

If the domain of unmodified universal terms is necessarily non-empty in extensional contexts *non-existence* predicts that *any* will be ruled out. This is what happens in (36a). A postnominal modifier, on the other hand, can denote properties with a temporal spread, to adopt Bolinger's terminology. The resulting set is some subset of the set of individuals denoted by the head noun. This subset may or may not be empty. *Non-existence* is satisfied and *any* becomes possible, modulo satisfaction of *vagueness*. Let us demonstrate with (36b) how this may come about.

Imagine, for example, that the speaker is at a party where he doesn't take note of all the women present but focuses his attention on John. In a short while he might well have enough evidence to decide that the property common to the women John talked to is simply that they came up to him. At some point, he stops watching John or maybe he simply doesn't take note of the women in question so that at the end of the meeting he would not be in a position to pick out the subset of women at the party who came up to John. He is now in a position to express the generalization in (36b).⁸ Everything he saw supports the truth of the statement, and furthermore, the set of individuals who would verify the truth of the statement is not contextually salient. The net effect is that the statement seems to be more about John's disposition rather than about John's actual behavior, as pointed out to me by David Dowty and Dick Oehrle.

This example also illustrates why statements with subtriggered *any* tend to imply iteration of events. Iteration of events allow us to arrive at generalizations or regularities that focus on the properties that are criterial rather than on the individuals who are the bearers of such properties. They result in generic sentences of the kind that Carlson (1989) discusses. This environment is conducive to *any* since it lends itself to *contextual vagueness*.

Recall though that iteration of events is a sufficient but not a necessary condition for licensing subtriggered *any*. A relevant example was (32), repeated below as (38):

- (38) At the end of his speech, the president thanked any soldier who had fought in the gulf war.

One might easily imagine the president thanking soldiers on a television or radio broadcast, where there is no group of soldiers in the visual domain. Another context that would license this use would be a large gathering of soldiers where the relevant subset has not been identified. In either case, the appropriateness of (38) is due to the relevant subset of soldiers not being contextually salient.

The importance of *contextual vagueness* can also be demonstrated for (19a), repeated below as (39):

(39) Anybody who is in Mary's semantics seminar is writing a paper on Polarity Items.

Suppose, for example, that the graduate director in his meetings with various graduate students, comes to realise that every student in Mary's semantics seminar that he talked to is working on polarity items. He may then conclude that this is not a coincidence, but part of the requirements of the course. If he is unaware or unsure or has forgotten whether the students on whom he is basing his generalization comprise all of the students in her seminar, he can use (39). But if he is aware of the set of students in Mary's class he can only use the statement with *every* in it.

We can conclude that *any* is acceptable in property-loaded statements because it leaves room for lack of direct knowledge of the set of individuals involved on the part of the speaker. The choice of individual-loaded statements, on the other hand, commits the speaker to direct knowledge of the members of this set. The difference between *any* and *every* with respect to discourse antecedents and anaphora that we saw in section 2.2 simply brings this out in a transparent way.

Before we turn to downward entailing contexts, let us consider some cases where subtrigging does not have the usual effect:

- (40)a. There is every/*any book by Chomsky in this library.
 b.* There is every book by Chomsky in this library. Since he wrote no books, there are no books by him in the library.
 c. Is there any book by Chomsky in this library?

Although universal terms are generally disallowed in *there-insertion* contexts they may be acceptable under a special list interpretation. Their acceptability, however, seems to improve with postnominal modification so that (40a) with *every* does not suggest a list interpretation. Leaving that aside, the point to note is that a *there-insertion* sentence with *every* resists the cancellation test; (40b) is a contradiction. This accords fully with the insights in Milsark (1974) or McNally (1992). Predictably, *any* is ruled out by *non-existence*.

As pointed out to me by Matthew Stone, *any* in *there-insertion* contexts is acceptable in questions because existence is not entailed, as shown in (40c).⁹ It may be worth noting that (40c) is ambiguous here between indefinite and universal readings. The latter can be brought out by adding *absolutely*.

Similar facts hold for (41a), where the matrix clause has a verb of possession and embedded clause a stative verb:

- (41)a. John has every/*any book that Mary wanted.
 b.* John has every book that Mary wanted. Since she didn't want any, he doesn't have any book.
 c. Does John have any book that Mary wanted?

The explanation for the distribution of *any* here would be parallel to the *there-insertion* case.¹⁰

3.3. Downward Entailing Contexts

It is a corollary of the *non-existence* clause that *any* would be acceptable in the scope of negation. Take the cases discussed in section 1.1, repeated below:

- (42)a. John didn't talk to any woman (who came up to him).
 b. Any man *(who saw the fly in the food) didn't eat dinner.

There are two possibilities to consider, one where the host NP is indefinite and the other where it is universal.

If the host is indefinite, an If in which negation has narrower scope will assert the existence of an individual verifying the statement and be ruled out. If negation cannot take scope over an indefinite in subject position, the unacceptability of indefinite *any* in (42b) is explained. There is, however, cross-linguistic variation with respect to this fact. Hindi, Japanese and Basque do license NPI in subject position. Following Laka (1990), I assume that the phrase structure of some languages places negation higher than the subject (see also Kawashima 1994 for Japanese). And in these languages *non-existence* can be respected with an NPI in subject position.

Universal *any*, on the other hand, is possible in subject position in English as shown by the effect of subtrigging in (42b). The interesting thing is that (42b) unambiguously assigns narrow scope to negation while the corresponding statement with *every* allows scope interaction between the two. This fact, noted by Davison (1980) for example, follows straightforwardly here. Assigning wide scope to negation would be tantamount to an assertion of existence since $\neg\forall \Leftrightarrow \exists\neg$. This would run foul of the *non-existence* clause. The same would be true of the universal in object position.

The behavior of *any* in downward entailing contexts has been extensively studied and the account I have given is certainly not meant to be exhaustive. The point I wish to emphasize is that the scope relation is accounted for in the present proposal in a manner that is not incompatible with theories of licensing in downward entailing contexts such as Ladusaw (1979) or Kadmon and Landman (1993), to mention just two. There are other aspects of interpretation that have been discussed by Fauconnier (1975a and 1975b), Krifka (1990) and Lee and Horn (1994) having to do with the relative strength of statements with or without *any* in an scale of implicatures that I do not go into here. At an impressionistic level, however, a property-loaded statement will always be stronger than an individual-loaded statement and I would hope that insights from other theories could be incorporated into the present approach. But I must leave this for another occasion.

3.4. Modal Contexts

I have made a distinction between *non-existence*, an absolute ban that prevents *any* from occurring in statements that entail existence, and *contextual vagueness*, a pragmatic constraint that comes into effect in those situations where there happen to exist individuals verifying the statement. In this subsection I will use this distinction to explain the distribution of *any* in modal contexts.

Modal contexts, generally thought to license *any*, do not always do so. Modals of necessity, as opposed to modals of possibility, are resistant to *any*, as has been noted by Horn (1972), Lasnik (1972) and Davison (1980). Some relevant examples are given below:

(43)a. You can pick any flower.

b.* You must pick any flower.

(44)a. Any student could have got an A on the quiz.

b.* Any student must have got an A on the quiz.

(45)a. Anyone can sign this.

b.* Anyone must sign this.

As far as I know, there is no clear explanation for this in the literature. Before attempting one, let us note that in each case subtrigging renders the context suitable for *any*:

(46)a. You must pick any flower you see.

b. Any student who studied for the exam must have got an A on the quiz.

c. Anyone who is interested in the matter must sign this.

I will take the case of permission and command in (43a)-(43b) and (46a) to demonstrate how *non-existence* and *contextual vagueness* can account for these facts, adopting the approach of Lewis (1979). Lewis explicates the difference between permission and command in terms of a *sphere of permissibility*, which denotes for each $\langle t, w \rangle$ a set of worlds, whose members are all permissible at t in w . $!$ and $;$ represent command and permission respectively and can be prefixed to any sentence ϕ . The utterance of $!\phi$ at t in w , contracts the current sphere of permissibility by removing all those accessible worlds in which ϕ is false. The utterance of $;\phi$, on the other hand, expands the current sphere of permissibility to ensure that at least some world(s) in which ϕ is true is accessible from w . This means that after the execution of the command, ϕ will be true in the actual world, while after the execution of the permission ϕ may or may not be true at w .

Applying this to the cases at hand, the execution of the permission (43a) does not ensure that $\exists x [flower(x) \ \& \ pick(you, x)]$ will be true at w . *Non-existence* is satisfied and *any* is acceptable, as long as it is left vague which flowers are at issue.

Keeping in mind that we only look at worlds in which the domain of quantification is non-empty, (43b) entails the offending statement $\exists x [flower(x) \ \& \ pick(you, x)]$ and is predictably ruled out. Subtrigging, of course, saves the situation because it leaves room for an empty domain of quantification. Now, the execution of the command contracts the *sphere of permissibility* as before. But of the worlds that remain, there are some in which the statement is vacuously true. No existence is asserted and the statement will be acceptable as long as *contextual vagueness* is satisfied. The statement cannot be uttered while pointing to a bunch of flowers that the speaker knows can be seen.¹¹

Note that in this approach, it follows that (43a) will be ambiguous between universal and indefinite readings. More needs to be said, of course, to account for the intuition that the permission applies to any subset of the domain. Lewis (1979) addresses the problem of determining exactly how the set of worlds brought into the sphere of permissibility is to be determined. An insightful discussion of the problem with special reference to *any* is also presented in Kamp (1973) but to go into this issue would take us outside the scope of the paper. Let me simply note that in (46b) the host NP can only be a universal since execution of a command with an indefinite would entail existence and be ruled out. And here our intuitions are clear, quantification is not over arbitrary subsets but over the whole set.

An interesting consequence of this approach is that it predicts that subtrigging cannot repair modals of necessity when an overt partitive is used. The relevant contrast is the following:

(47)a. You can pick any of the flowers (you see).

b. Any of the students (who studied for the exam) could have got an A.

c. Any of the people (who are interested in the matter) could sign this.

(48)a.* You must pick any of the flowers (you see).

b.* Any of the students (who studied for the exam) must have got an A.

c.* Any of the people (who are interested in the matter) must sign this.

The definite inside the partitive ensures that the domain of quantification is non-empty and noun modification cannot have the usual effect of suspending this presupposition. Now, in the case of (47a) this does not matter since as we saw, execution of the permission does not result in a flower being actually picked. In the case of (48a), on the other hand, execution of the command will result in such a situation, violating the *non-existence* requirement.

Earlier accounts of FC *any*, Horn (1972) and Lasnik (1972) for example, devote a lot of attention to explicating scope interaction. They have to navigate a tricky course when faced with the range of data we have looked at here. In the approach I have suggested, there is no difference between possibility and necessity operators with respect to their scope relation with *any*.

CONCLUSION

I have presented a proposal for *any* in non-negative/non-modal contexts that pose a challenge to K&L's proposal. I have also shown how this account would extend to *any* in negative and modal contexts. In concluding this paper I would like to briefly comment on the relation between the two proposals.

There are three basic ideas that K&L advance. The first is that *any* attaches to an indefinite and like all indefinites NP's with *any* have no inherent quantificational force. I have departed from this in two crucial ways. I allow *any* to attach to indefinites and universals. As a result, NP internal quantificational force is admitted. K&L's essential insight, however, that *any* is not a basic determiner setting the quantificational force, but is something that affects the domain of quantification is preserved.

This brings us to their second idea, that *any* impacts on the domain of quantification by widening it. I have argued that *any* only occurs in property-loaded statements, which can be thought of having this effect. The set of individuals that instantiate a property is always going to be bigger than the contextually restricted set that ordinary determiners take as their argument. To that extent, the present proposal incorporates widening.

Finally, although I do not use the semantic criterion of *strengthening*, as defined by K&L, the notion that a statement with *any* is stronger than a statement without it is not antithetical to my proposal. Property-loaded statements are stronger, in some intuitive sense, than individual-loaded statements. I have demonstrated, however, that this notion of strengthening cannot be used as a licensing principle. The alternatives I have proposed, *non-existence* and *contextual vagueness* draw on the modality that I believe is essential to *any*.

ENDNOTES

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¹ I indicate sentences where *any* is not acceptable as ungrammatical. It may be that in some cases the intuition is more that it is awkward rather than ungrammatical.

² Eisner (1994) actually attempts an explanation for the unusual scope properties of universal *any*. He notes that quantification may be over all possible individuals, not just over individuals in the actual world. This has something in common with the approach I advocate.

³ Vendler (1967) notes such examples as unacceptable. I disregard Vendler's

judgement since my informants accept them, without exception.

⁴ Lee and Horn (1994) suggest that FC *any* is ruled out where an appropriate kind scale cannot be constructed. If I understand their proposal correctly, this suggests that (2a) should be compared to (i) and (4a) to (ii):

(i) John kissed even the ugliest woman.

(ii) John kissed even the ugliest woman who came up to him.

My informants do not find a significant contrast between (i) and (ii).

⁵ Giannakidou (1994) and (1995) notes that subjunctive mood can license NPI's in Modern Greek. Her claim that non-veridicality is crucial to such licensing seems to be compatible with view being proposed here.

⁶ Examples (24), (25) and (31) are fashioned after those in Carlson (1977) where bare plurals, as opposed to ordinary NP's, are argued to be kind-denoting terms.

⁷ Greg Carlson also pointed out to me that (33c) improves if the common noun is plural. Impressionistically, it seems to me that one adds a covert postnominal locative phrase like *there*. I have no explanation for why a similar enhancement of (33c) is not possible.

⁸ Note that (36a), even if it were allowed by *non-existence*, would violate *contextual vagueness*. If the speaker observes John talking to various women but does not notice any property they have in common, he cannot make a universal statement unless he notices that John talks to every woman. But if so, there is a set of women that can be recovered from the context to which *any* will be anchored. It is only possible to balance universality of the claim with *contextual vagueness* if the relative clause provides a property that can be used in carving out a subset of the contextually given set of women.

⁹ K&L's approach does not straightforwardly apply to questions. According to them, (ia) is a Yes/No question about a bigger set than (ib) and (iia) a constituent question about a bigger set than (iib):

(i)a. Did you read any book?

b. Did you read a book?

(ii)a. Which books did any student read?

b. Which books did some student read?

A question A entails a question B, if a true answer to A is a true answer to B (Groenendijk and Stokhof 1984). Suppose that the original restricted domain is the set of textbooks and the widened domain is the set of textbooks and novels. If I read a novel last night but no textbook, *yes* would be a truthful answer to (ia) but not to (iib). Thus (ia) does not strengthen (ib). In the case of (iia) and (iib) entailment goes through under weak but not strong exhaustivity. Suppose the student in the narrow domain read *The Tin Drum* and *The Full Catastrophe*, a strongly exhaustive answer to (iib) should include these and only these propositions. If someone in the wider domain read *Past Continuous* a strongly exhaustive answer to (iia) would list all three books.

¹⁰ Addition of a possibility (but not necessity) modal in the relative clause seems to redeem both contexts:

(i) John has any book that Mary could want.

(ii) There is just about any book you could imagine in this library.

The difference between possibility and necessity modals with respect to licensing

any is discussed in section 3.4.

¹¹ The susceptibility to pragmatic factors can also be seen in the case of (46b)-(46c). For (46b) the speaker must not have in mind a set of students who are known to have studied for the exam. Similarly, we would not accept (46c) if it was preceded by a request for everyone interested in the matter to raise their hands. The relevant subset cannot be known to the speaker.

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