

DRAFT – Nov 2009

VARIATION IN ENGLISH FREE CHOICE ITEMS

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1. Overview

There has been significant progress in our understanding of Free Choice *any* and of *-ever* free relatives in recent years.¹ Very often, however, the investigation of these two Free Choice Items (FCI) in English has been conducted in parallel. One of the aims of this paper is to bring the two strands together in a way that can account for commonalities and differences between them and, perhaps, a third FCI *some N or other* whose semantics has not been studied as extensively. The second is to account for two problems in the analysis of FC *any* that have proved recalcitrant to theoretical explanation.

I claim here that all FCI have a multi-dimensional meaning, sharing a primary truth conditional contribution with standard one-dimensional quantifiers like *every*, plain free relatives and *some*, but encoding on top of that, a requirement of indeterminacy.

I characterize the indeterminacy of FC *any* as a grammatical constraint against the extension of the relevant property (the intersection of the nominal and the verbal properties) being the same in every accessible world. It is predicted to be unacceptable in precisely those cases where the primary meaning contradicts this requirement of fluctuation. This allows for a uniform account of two knotty problems, subtriggering and the partitive restriction. I also take note, in accounting for the behavior of *any* in negative statements, of supplemental *any* which has distinct properties from regular FC *any*.

In contrast to the indeterminacy requirement of *any*, the indeterminacy requirement of *-ever* and *some N or other* is weak, merely implying lack of knowledge on the part of the speaker about the identity of individuals or lack of relevance of their identity. Such indeterminacy is compatible with fluctuation (as is the case with *any*) but is not dependent on it.

¹ Many, but not all, of the major recent contributions on these topics are in the references. Thanks to audiences at the University of Amsterdam, the University of Massachusetts-Amherst, Georgetown University, University of Pennsylvania and Asian GLOW 7. Special thanks to Gennaro Chierchia for probing questions and comments on an earlier version. All remaining errors and omissions are my responsibility. Further comments and questions would be much appreciated.

I should state at the outset that I take this to be an analysis in progress. There remain various loose ends to be tied up and extensions to be explored. Some of these I list in the course of the paper and in the last section. Though I take note of the very influential approach to free choice effects developed by Kratzer and Shimoyama (2002), Chierchia (2006) and Fox (2007), I do not discuss it in any detail. I also only briefly address the issue of implementation. I suggest one way of dealing with the fluctuation requirement of *any* which, if correct, would give theoretical bite to its inherent modal feel. I also show how it might derive the well known proclivity of FC *any* for wide scope. However, I leave it open in this paper whether the requirement of fluctuation is appropriately classified as assertion, presupposition or conventional implicature (in the sense of Potts 2005).

2. FC *Any*: the Core Generalizations

Several explanations have been given for the distribution of English FCI *any* but there does not exist at present any single account that captures the full range of facts. The problem can be demonstrated by the following paradigm:

- (1) Any owl / *any of these owls hunts mice.
- (2)a. Bill read any book *(he found) / *(that was on his reading list).
b. *Bill read any of these books/any of the books he found.
- (3)a. Bill may/*must read any of these books.
b. Bill may read any book (he finds)/(on his reading list).
c. Bill must read any book *(he finds)/ *(on his reading list).

(1) illustrates the canonical generic use of FC *any*. Note that the partitive is unacceptable here.² That is, FC *any* can participate in generic statements but not in habitual statements. Data like this are at the heart of the intuition that the domain of *any* extends beyond a contextually defined set, accounting for the continued importance of the notion of widening, proposed by Kadmon and Landman (1993).

(2) illustrates the subtriggering effect, discussed first in Legrand (1975). FC *any* is not good in episodic statements without an appropriate relative clause or other phrasal modifier. In certain contexts, the modification may be covert (see Dayal 1998). But partitive *any* remains unacceptable, even with an appropriate modifier present.³

² There may be a reading in which reference is to sub-kinds of owls (Lisa Selkirk p.c.).

³ The judgments reported here only hold to the extent that a demonstrative or a definite has a rigid interpretation. This is clearer in the case of demonstratives than definites. Thanks to Graham Katz and Paul Portner for discussion of this point. The ameliorating effect of subtriggering correspondingly is dependent on the modifier not anchoring the reference contextually.

The importance of partitive *any* emerges again in modal contexts, illustrated in (3). Possibility modals are a hospitable environment for *any* but not necessity modals. As in the episodic case, necessity modals take non-partitive FC *any* with subtriggering but they cannot accept partitive *any*. The generalization, then, is as given in (4):

| (4). | Generic | ◇-Modal | □-Modal | Episodic |
|------------------|---------|---------|---------|----------|
| Unmodified Any | √ | √ | * | * |
| Subtriggered Any | √ | √ | √ | √ |
| Partitive Any | * | √ | * | * |

Dayal (1998) noted subtriggering and partitivity as problematic for Kadmon and Landman, highlighting in different ways the limitations of widening as an explanatory notion. Modification of the common noun in subtriggering should not affect the strengthening requirements for widened domains while the inner definite in partitives should block widening altogether.

The alternative account proposed there can be illustrated by considering necessity and FC *any*. To explain subtriggering, I treated *any* as a universal whose domain of quantification includes all possible individuals. (3c), for example, is unacceptable without a modifier because it is an impossible command -- there are books in worlds in which Bill does not exist. The choice of a very wide domain clashes with the imperative which has to be restricted to worlds within Bill's reach. The modifier introduces a spatio-temporal bound on the domain of quantification, making it possible for the command to be fulfilled. The distribution of *any* is also subject to an overarching requirement of vagueness, which says that the set of individuals who end up with the property denoted by the verb phrase should not be contextually salient. Note that (3a) does not encode an impossible command, the books being firmly grounded in the here and now by the partitive. But the combination of universal quantification over worlds and universal quantification over a fixed set of books violates vagueness: there can be no doubt about the set of books that will be read by Bill if he fulfils the command.

This two-pronged proposal has been criticized by various scholars. The explanation for the subtriggering effect has been thought to be too weak for the kind of ungrammaticality that is perceived, the explanation for the partitive restriction for being non-compositional. And, of course, there is unease about the need for two unconnected parts to the explanation for the licensing of *any*. At the same time, it would be fair to say that no account of FC *any* has been developed since that work that presents a truly satisfactory alternative to both problems. This, then, is another attempt at tackling what has remained elusive in our understanding of FC *any*.⁴

⁴ The account of subtriggering and the partitive restriction presented here is a partial reversal of the claims in Dayal (1998) and can be seen as a development of ideas present in Dayal (1995a).

3. FC *Any*: the Proposal in a Nutshell

I would like to propose that *any* is a universal quantifier, like *every* (and *each*). Unlike *every*, however, *any* also makes a secondary contribution to meaning that can be characterized as a requirement of *fluctuation*. It states that no single set of individuals is such that it constitutes in every accessible world the set of individuals in the intersection of the nominal and the verbal properties in that world. FC *any* is ruled out in statements whose truth conditional meaning contradicts fluctuation: $D_{FC}(P)(Q) = D(P)(Q) + q$ so that: $*D_{FC}(P)(Q)$ iff $D(P)(Q) \Rightarrow \neg q$:⁵

- (5)a. $\llbracket \text{Any} \rrbracket = \lambda P \lambda Q \forall x [P(w)(x) \rightarrow Q(x)]$ *Universal Quantifier*
 b. $\neg \exists X \forall w' w_a \leq w' \lambda x [P(w')(x) \& Q(w')(x)] = X$ *Fluctuation*

That is, I take *every* and *any*, to be universal quantifiers that differ only in the presence or absence of the secondary component: *any* includes fluctuation, *every* does not.⁶ The distribution of *any* is restricted but that of *every* is not, because *any* is incompatible with non-fluctuating contexts, while *every* is as compatible with fluctuating as well as with non-fluctuating contexts. Note that the notion of fluctuation differs crucially from the notion of widening in making reference not only to the nominal property but also to the verbal property. Let us turn now to the core data given in section 2 and see how the distribution of FC *any* can be handled under this view of the phenomenon.

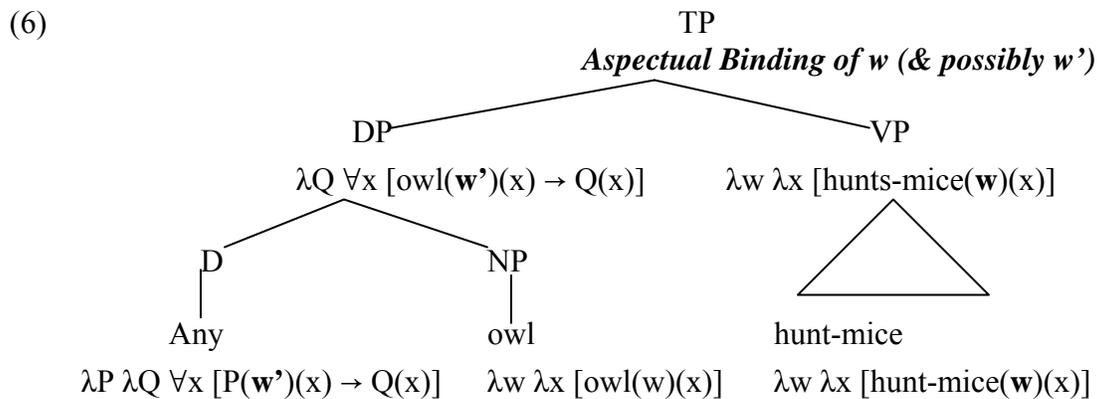
4. Deriving FC *Any*: Generic Statements

The quintessential case of FC *any* is a generic statement where the set of individuals denoted by the noun phrase varies with worlds. Recall that partitive *any* is not acceptable in such statements. Put another way, a partitive obligatorily involves a habitual reading and *any* is not acceptable in habitual statements. Understanding the difference between generic statements and habitual statements is therefore a good starting point for our account of FC *any*.

⁵ Note that in the case of partitive *any*, the property P will be built out of the phrase *of these/the N*, with *of* of type $\langle e \langle s \langle e, t \rangle \rangle \rangle$. It will denote a function from worlds w' to the set of entities that are individual parts in w' of the plural entity denoted by the definite inner DP at w_a : $\lambda w' \lambda x [x \leq_{w'} \text{iota}(N(w_a))]$. The extension of this function in any world, then, will be the contextually salient set N at w_a . Whether this set will be in the extension of N in the worlds of the modal base will depend on the modality involved (see also ft 8). I am indebted to Gennaro Chierchia for extensive discussion on this point, which has led hopefully to greater clarity in the articulation of the idea of fluctuation as applied to partitive *any*.

⁶ Note that *any* and *each* are not in complementary distribution, cf: *Bill may read each/any of these books*. Clearly, *each* places restrictions only on the set denoted by the noun (the set N must be contextually anchored). *Any* is sensitive to the nominal as well as the verbal property.

I make the standard assumption that the world/spatio-temporal variable on the VP is bound by tense and aspect in the extended projection of the verb, while the world/spatio-temporal variable on the DP has the option of remaining free (Enc 1986). This gives us the schema in (6) and the possible derivations in (7a)-(7c) for the cases under discussion. I am assuming that genericity involves some form of universal quantification over worlds/situations:



- (7)a. $\forall w w_a \leq_{\text{generic}} w \forall x [\text{owl}(\mathbf{w})(x) \rightarrow \text{hunts-mice}(\mathbf{w})(x)]$ *any, every*
- b. $\forall w w_a \leq_{\text{generic}} w \forall x [\text{owl}(\mathbf{w}_a)(x) \rightarrow \text{hunts-mice}(\mathbf{w})(x)]$ *every, *any*
- c. $\forall w w_a \leq_{\text{generic}} w \forall x [x \leq_{w-a} \text{ty} [\text{owl}(\mathbf{w}_a)(y)] \rightarrow \text{hunts-mice}(\mathbf{w})(x)]$ **partitive any*

The quantificational contribution of an *any*-statement and an *every*-statement is the same. If w' in (6) is bound by verbal operators, we get a generic statement, with owls varying with worlds. If w' in (6) remains free, we get a habitual statement about the set of owls in a given world. A habitual statement contradicts the requirement of fluctuation that accompanies *any*. *Any*-statements are therefore necessarily generic while *every*-statements can be generic or habitual. *Each*-statements are only habitual.⁷

We see how the requirement of fluctuation can be used to derive the acceptability of *any* in generic statements and its unacceptability in habitual statements. The generic context, however, poses the least challenge for theories of *any* and there are other approaches that deal equally well with them. Let us turn now to the more complex cases and see how an explanation in terms of fluctuation fares in those contexts.

⁷ The generic reading of universals has not featured prominently in the literature on genericity, but see Saeboe (2001) for relevant discussion. I should emphasize that I do not treat *any* as a generic indefinite, for reasons that I have discussed previously in Dayal (1998) and (2004).

5. Deriving FC Any: Modal Statements

Let us start with the robust generalization that partitive *any* is only acceptable with possibility modals. As noted earlier, the fact that partitive *any* is sensitive to the modal in the verbal projection shows clearly that an explanation local to the nominal domain cannot work. Widening, rooted as it is in the nominal property, is inoperative in these cases. The notion of fluctuation, however, makes the right distinctions.

Consider (8a). It is easily verified that a wide scope universal over possibility allows for different books to be read in different worlds, satisfying fluctuation. In the model indicated in (8c) we get: $\{ \langle w_1, \{a\} \rangle, \langle w_2, \{a,b\} \rangle, \langle w_3, \emptyset \rangle, \langle w_4, \{b\} \rangle \}$:⁸

(8)a. Bill may read any of these books.

b. $\forall x [x \leq_{w-a} \text{ty} [\text{book}'(w_a)(y)] \rightarrow \exists w' w_a \leq w' [\text{read}'(w')(x)(b)]]$

c. book a: $w_1 \rightarrow a, w_2 \rightarrow a, w_3 \rightarrow \emptyset, w_4 \rightarrow \emptyset$; book b: $w_1 \rightarrow \emptyset, w_2 \rightarrow b, w_3 \rightarrow \emptyset, w_4 \rightarrow b$

It is sometimes thought that English sentences like (8a) do not have a reading in which the permission extends to the full set of books. I believe this is incorrect. If one utters (8a) and Bill reads all the books, one can hardly say that he has been disobedient. The present account allows for this, as witnessed by w_2 in (8c).

We see that in the case of necessity, fluctuation is violated: $\{ \langle w_1, \{a,b\} \rangle, \langle w_2, \{a,b\} \rangle, \langle w_3, \{a,b\} \rangle \}$. Consequently, *any* is unacceptable:⁹

(9)a. *Bill must read any of these books.

b. $\forall x [x \leq_{w-a} \text{ty} [\text{book}(w_a)(y)] \rightarrow \forall w'. w_a \leq w' [\text{read}'(w')(x)(b)]]$

c. book a: $w_1 \rightarrow a, w_2 \rightarrow a, w_3 \rightarrow a$; book b: $w_1 \rightarrow b, w_2 \rightarrow b, w_3 \rightarrow b$

⁸ The modal base in the cases under discussion would be restricted to worlds where the set of books includes at least a and b. Other books, if present, will not affect the computation of fluctuation (see ft. 5).

⁹ Gennaro Chierchia has pointed out to me that the inner DP of the partitive need not be anchored to the actual world. I should clarify that I do not stipulate that the property built out of a partitive be so restricted. In *Mary believes she has some books and that she can/*must read any of them*, the partitive will be cued to Mary's belief worlds. The contradiction for *must* will be derived as follows. The primary meaning will require her to read all the books she thinks she has in all the relevant worlds, while fluctuation will require the extension of the books read to vary across those worlds. While I can see the need to navigate carefully in this terrain, my working hypothesis is that as long as the inner DP in the partitive shares the same index as the world from which accessibility is determined, the distribution of *any* can be handled. This issue can only be explored more thoroughly once we have clarity on whether fluctuation is or is not part of the assertion (see section 11 for a brief discussion of the issues involved).

We have seen that a universal modal interacting with a universal quantifier grounded by the inner DP rules out the possibility of fluctuation while an existential modal allows for it. Thus fluctuation accounts for the distribution of *any* in a context where no widening is possible.¹⁰ We now turn to episodic contexts.

6. Deriving FC *Any*: Episodic Statements

Unmodified *any* and partitive *any* are both unacceptable in episodic contexts. This follows if we make the standard assumption that universals in episodic statements presuppose non-empty domains of quantification. Whether the world variable on the DP is free or bound, fluctuation will be violated because an episodic statement refers to exactly one world. In (10), for example, a single set of books, namely all the books in that world, was read in that world:

(10)a *Bill read any book / any of these books.

b. $\forall x [\text{book}'(w_a)(x) \rightarrow \text{read}'(w_a)(x)(b)]$

c. $\forall x [x \leq_{w_a} \iota y [\text{book}'(w_a)(y)] \rightarrow \text{read}'(w_a)(x)(b)]$

There is no reference to possible individuals in this explanation. The problem, rather, is the opposite. *Any* is ruled out because its denotation is too grounded in actuality, in the set of individuals in the actual world.

We turn now to the challenge of pinning down the role of subtriggering. Note, first of all, that a garden variety account of modification does not help. As shown below, fluctuation remains elusive under simple modification (11a). Variation in the set of books needs to be derived via the relative clause in order to get the desired result (11b):

(11)a. $\forall x [[\text{book}'(w_a)(x) \ \& \ \text{found}'(w_a)(x)(b)] \rightarrow \text{read}'(w_a)(x)(b)]$

b. $\forall x [[\text{book}'(w_a)(x) \ \& \ \exists w'. w_a \leq w' [\text{found}'(w')(x)(b)]] \rightarrow \text{read}'(w_a)(x)(b)] \equiv$

$\forall x \forall w'. w_a \leq w' [[\text{book}'(w_a)(x) \ \& \ \text{found}'(w')(x)(b)] \rightarrow \text{read}'(w_a)(x)(b)]$

The ameliorating effects of subtriggering is only observed with post-nominal phrasal modifiers (see Dayal 1995a and 1998 for the core generalizations). We can take this to show the crucial role of the world/situation variable, which prenominal modifiers lack. Also, subtriggering is felicitous in precisely those contexts where the speaker (or attitude holder, see section 11) does not have immediate knowledge of the full set of individuals involved. We may attribute the licensing of *any* by a modifier to its ability to introduce fluctuation cued to epistemic modality.

¹⁰ Fluctuation may also explain why *n* in a sentence like *you may read any n of these books* can be any number less than the total number of books. If *n* = the number of books, all n is needed.

Indirect evidence for this approach comes from noting a subtle but clear shift in the domains of quantification of an unmodified universal quantifier and a modified universal quantifier. (12a) is an outright contradiction but (12b)-(12c) are not:

- (12)a # I read every book but there were no books so I read nothing.
b. I read every book I found but since I found no books, I read nothing.
c. I read every book on the list but since there were no books listed I read none.

While an unmodified universal presupposes a non-empty domain of relevant entities, a modified universal lets in the possibility of variation down to the empty set. The claim here is that subtrigging rescues *any* because of this aspect of the semantics of modification. The speaker does not know how many books are at issue, the relevant set may have ten or five or four or zero members.

Further indirect support for this comes from considering mood and aspectual distinctions. Iterative contexts are known to be conducive environments for subtrigged *any*, but iterativity is not a necessary condition (Dayal 1998). (13a), for example, is acceptable if uttered in a context where the relevant set of soldiers is not contextually salient. It has been noted by Quer (1998), on the basis of Catalan examples corresponding to (13a), that subtrigging is possible with subjunctive, not indicative, mood. This also holds for Spanish (Carlo Linares p.c.) and Italian (Chierchia 2006).¹¹ In an account of subtrigging in which the modifier provides a spatio-temporal anchoring to the world of evaluation, this is somewhat surprising – perhaps the opposite would be expected. From that point of view, the present proposal resonates better with cross-linguistic evidence:

- (13)a. At the end of his speech, the President thanked any soldiers who had fought in the Gulf War.
b. Anyone who was at the rally signed the petition.

(14) If every semanticist owned a villa in Tuscany, what a joy it would be.

Another piece of suggestive evidence comes from data like (14) from Percus (2000). *Every* in conditionals can have a non-fluctuating reading in which happiness depends on the semanticists in the actual world owning villas in counterfactual worlds. It can also have a fluctuating reading where the semanticists in the counterfactual worlds are villa owners. If the present account is on the right track, a FCI is predicted to have only the fluctuating reading. This prediction is borne out. (14) with *any* has only the fluctuating reading and the same holds for the Spanish counterpart with FCI.¹²

¹¹ Menendez-Benito (2005) considers subtrigging marginal or unacceptable in Spanish. Clearly, there is some variation in judgments. I base the discussion here on the judgments I have elicited.

¹² The English sentence would also have an existential reading, roughly *if even one semanticist had a villa in Tuscany what a joy it would be*. This reading I take to be due to NPI *any*.

Let me reiterate that the relevant aspect of modification that makes FC *any* acceptable in episodic statements is a type of modality that allows fluctuation.¹³ That is, the possible worlds that are invoked vary in the set of relevant entities, not just in the identity of a fixed set of entities. The importance of this will become clear in our discussion of variation among FCI. I should note here that the modality of subtriggering has previously been suggested by other researchers. The present proposal, though different in details of implementation, is in line with them rather than with Dayal (1998) where the vagueness requirement was used to capture the perceived indeterminacy.

7. Deriving FC *Any*: Negative Episodic Statements

Since negation does not introduce reference to other worlds, it is predicted that FC *any* would be ruled out in negative episodic statements as well, a prediction that seems to be counter-exemplified by sentences like (15). (15a) readily allows for a reading in which the universal takes scope over negation. It is also possible to get the other scope order, with the addition of *just* and/or with special intonation, as in (15b). The problem can be articulated more clearly in a language like Italian where FCI and NPI are lexically distinct. (16a)-(16b) are from Chierchia (2006):

- (15)a. Bill didn't read any book.
 b. Bill didn't read (just) any_F book, he read *Remembrance of Things Past*.
- (16)a. Non leggerò qualunque libro
 (I) won't read (just) any book.
 b. Non leggerò qualunque libro che mi consiglierà Gianni
 (I) won't read any book that Gianni will recommend to me.

Unmodified FCI *qualunque N* when accompanied with special intonation has only a $\neg\forall$ reading. Without special intonation, subtriggering is required in order for it to be acceptable. The reading it has in this case is $\forall\neg$. This suggests that the $\forall\neg$ reading of the non subtriggered English (15a) may, in fact, be the $\neg\exists$ reading of NPI *any*.

Focusing on Italian, then, a non-subtriggered statement like (16a) is not acceptable since it is an episodic statement that does not admit fluctuation. Once it is subtriggered, a negative statement like (16b) becomes acceptable, just like its affirmative counterpart. In the non-subtriggered case, the set of books that will be unread will be the full set in the actual world. In the case of subtriggering, the set of books unread will vary depending on what Gianni might recommend.

Turning now to the $\neg\forall$ reading, the primary question has to do with the role of intonation in promoting it. In accounting for this reading, I will look at examples like (17) in which *just any* goes hand in hand with supplemental *any*, a term due to Jennings

¹³ Cross-linguistically, this modality may be covert or encoded in mood/aspect morphology.

(1994). These are cases in which *any* is linked to an indefinite (see Giannakidou 2001, Horn 2001 and Jayez and Tovena 2004). This can be overt (17a) or covert (17b): *press a key, any key*. Note that *just any*, like supplemental *any*, is not improved by subtriggering – special intonation is still needed to make it acceptable. Typically, the use of *just any* in affirmative statements like (18), an example fashioned after one by Vlachou (2007), also seems to require an addition indicating a purpose of some kind (see Dayal 2004 for some discussion of this):

- (17)a. He read a book, not just any book.
 b. (To continue), press any key / any of these keys.

(18) Bill picked up a book, (just) any book, and walked out of the store.

| | |
|---|------------------------------|
| $\exists x$ [book(w_a)(x) & pick-up (w_a)(x)(b)] | <i>Indefinite antecedent</i> |
| $\forall y$ [book(w_a)(x) \rightarrow $\exists w'$ $w_a \leq w'$ [pick-up(w')(x)(b)]] | <i>Supplemental Any</i> |

Restricting the modal base to worlds where Bill’s purpose in picking up the book is fulfilled, we can take the semantic contribution of supplemental *any* to give rise to the conversational implicature that no individual who has the nominal property is special with respect to the verbal property. That is, there is nothing special about the book Bill picked up. My claim is that when there is negation in the sentence, as there is in (17a), it targets this aspect of the meaning, leaving the indefinite antecedent untouched. Bill read a book that was special, namely *Remembrance Of Things Past*. This is, then, a case of what is generally classified as metalinguistic negation, which is known to be signaled by intonation.

I should acknowledge here that while the $\forall\neg$ reading of FCI is well accounted for under the present approach, the $\neg\forall$ reading requires further study. To conclude our current discussion of FC *any*, I have presented a uniform account of two recalcitrant problems – subtriggering and the partitive puzzle – and shown its usefulness in accounting for the occurrence of FC *any* in negative episodic statements as well. I will now turn to the question of variation among FCI in English.

8. Variation in English FCI: Quantification

English has three FCI, *any*, *wh+ever* and *some N or other*. Of these, the first two have received considerable scrutiny but insights from one, unfortunately, have not typically been used to understand the other (but see Horn 2001). I would like to propose that all FCI involve some form of indeterminacy but they differ along two dimensions, quantificational force and the strength of the indeterminacy they demand. Let us look at the quantificational dimension first.

I have taken *any* to be a universal, based on earlier work. Free relatives have been independently shown to be definites (Jacobson 1995, Dayal 1995b, 1997).¹⁴ And

¹⁴ For interesting cases of existential free relatives, see Caponigro (2003).

some N or other appears, on the face of it, to be an indefinite. Nevertheless, I will repeat some of the diagnostics that establish these correlations.

(19a), like its plain counterpart or an ordinary definite, entails maximality (19b) and can be used anaphorically (19c).¹⁵ By contrast, *some N or other*, like its plain counterpart, does not imply maximality (20b) and cannot refer anaphorically (20c):

- (19)a. John read whichever book(s) Bill bought.
b. #John read whichever books/the books Bill bought but not every book.
c. Bill bought some book(s). John read whichever book(s)/the book(s) Bill bought.
- (20)a. John read some book or other that Bill bought.
b. John read some book or other that Bill bought but not every book he bought.
c. #Bill bought some book. John read some book or other that Bill bought.

Finally, *-ever* free relatives can be distinguished from FC *any* by examining partitive readings. FC *any*, like the regular universal, has a strictly distributive reading. (21a) can only be true if John reads two thirds of each book. An *-ever* free relative or a definite has an additional collective reading. John's reading six out of nine books completely and not touching the other three is enough to make (21b) true:

- (21)a. John has read two thirds of any book(s)/every book Bill bought.
b. John has read two thirds of whichever books/the books Bill bought.

Some attention has been paid in the literature to differences between “universal” and “existential” FCI but not enough has been done to separate “definite” from “universal” FCI. The data here underscore the importance of doing so.¹⁶ Under the current approach, where the FCI includes a primary quantificational dimension, these differences are transparently reflected.

9. Variation in English FCI: Strong vs. Weak Indeterminacy

Let us start our discussion of indeterminacy with some data involving FC *any*. *Any* cannot be used to answer questions requiring full specification. (23), unlike (22), seems to reject the premise of the question, as do (24b')-(25c):

¹⁵ I do not give the plain free relative counterpart with *which book(s)* here since English does not allow internal heads without *-ever* but the version with *what* could also make the case.

¹⁶ Giannakidou and Cheng (2006) recognize definite FCI but do not distinguish it from universal FCI since they take items like FC *any* to be generic indefinites. Similarly, for Vlachou (2007).

- (22) Speaker A: Which books did Bill read?
 Speaker B: He read every book he found.
 Speaker A: Yes, but I want to know exactly which books.
 Speaker B: Oh, I see. That would be: Namesake, Catcher in the Rye...
- (23) Speaker A: Which books did Bill read?
 Speaker B: He read any book he found.
 Speaker A: Yes, but I want to know exactly which books.
 Speaker B: Oh, I couldn't tell you exactly which ones.
- (24) Speaker A: Who wants sushi for dinner?
 Speaker B: Everyone I checked with wants sushi, Sue, Tim John, everyone.
 # Speaker B': Anyone I checked with wants sushi, Sue, Tim, John, anyone.
- (25)a. Who would like dessert?
 b. Everyone would like dessert.
 c. #Anyone would like dessert.

-*ever* free relatives often appear to be synonymous to statements with FC *any*. In addition, they have an additional “identity” reading, prominent in episodic statements (26). In Dayal (1997) I argued for a requirement of indeterminacy with respect to identity as basic to *wh-ever* free relatives. I also include *some N or other* (see Farkas 2002 for discussion of its properties):

- (26)a. Bill eats whatever / anything Sue cooks.
 b. Bill was eating whatever Sue had cooked.
- (27)a. What she is cooking, namely ratatouille, uses onions.
 b. *Whatever she is cooking, namely ratatouille, uses onions.
- (28)a. I read some book or other, I can't remember it's name.
 b. *I read some book or other, namely *None to Accompany Me*.

To capture this property of *-ever* I built into its meaning universal quantification over worlds that are i(dentity)-alternatives to each other.¹⁷ ¹⁸ I claimed that this was

¹⁷ The identity reading was illustrated in terms of (in)ability to name an object but this was a simplification. *-ever* free relatives like *John Smith/That person, whoever he is, has a problem* were also mentioned. Knowledge of someone's name or ability to point to someone still allows for indeterminacy. See Heller and Wolter (2008) for an insightful analysis.

¹⁸ Indeterminacy does not hold in this clear-cut a form when the free relative is plural.

sufficient to account for both readings. The free choice reading of *-ever* free relatives would be derived when the identity reading combined with generic tense-aspect.¹⁹

To sum up, a distinction between two types of indeterminacy is needed to handle the range of English FCI. The indeterminacy of FC *any* is strong in the sense that the identity of the relevant set is not known to the speaker, because it is, in principle, not knowable: the set varies across worlds. The indeterminacy of *-ever* and *some N or other*, is weak in that it only requires ignorance about the identity of the set. The first is sensitive to the nominal and the verbal property, the other two to only the nominal property.

10. The Indeterminacy of *wh+ever* and *some N or other*

Following our general approach so far, the denotation of an *-ever* free relative will be the same as that of a plain free relative. It will denote the maximal entity with the relevant property. Its secondary meaning will convey that there are several *i*-alternatives for that referent. This is, in fact, what von Fintel (2000) proposes:

$$(29) \quad \llbracket wh+ever \rrbracket = \lambda P \iota x [P(w)(x)] \quad \textit{maximality}$$

$$\quad \exists w' \exists w'' \in F: \iota x [P(w')(x)] \neq \iota x [P(w'')(x)] \quad \textit{ignorance}$$

von Fintel has the *-ever* free relative trigger the presupposition that among the worlds in the modal base *F*, supplied by context, there is variation as to the identity of the referent.²⁰ That is, the notion of *i*-alternatives is cast in terms of epistemic modality and couched as a presupposition. In the case of (26b) for example, the assertion is simply that of a regular free relative, namely that Bill was eating the thing that Sue had cooked. But it is presupposed that the speaker doesn't know the identity of what she had cooked.

von Fintel also discusses what he calls the indifference reading of *-ever* free relatives (see also Tredinnick 2005). In examples like (30a) the speaker may well be aware of the identity of the object but may not care about the identity per se. Its being handy is what counts. von Fintel proposes the presupposition in (30b) to capture this:

$$(30)a. \quad \text{I grabbed whatever tool was handy.}$$

$$b. \quad \forall w' \in \min_w [F \cap (\lambda w' [\iota x [P(w')(x)] \neq \iota x [P(w)(x)])] :$$

$$\quad Q(w')(\iota x [P(w')(x)]) = Q(w)(\iota x [P(w)(x)])$$

indifference

¹⁹ von Fintel (2000) attributes to Anna Szabolcsi the observation that there are languages like Hungarian in which separate items are used for identity and FC readings. This would prompt a modification of this approach, either for those languages or for free relatives more generally.

²⁰ Ignorance can be cued to the hearer, though it is usually cued to the speaker (von Fintel 2000).

Regardless of what the free relative denotes, the truth of the statement remains constant across the worlds of the modal base that are minimally different from the actual world. The *min*-operator is taken to be the trigger for an existential presupposition, ensuring that there are varying worlds. I refer the reader to von Stechow's discussion for further details and for possible ways of unifying the ignorance and indifference readings. The point of relevance for us is that the meaning is two-dimensional. The assertive component captures the quantificational force of *-ever* free relatives and the presupposition its weak indeterminacy.

Another significant advance in our understanding of *-ever* free relatives is due to Heller and Wolter (2008). Focusing on the ignorance reading of *-ever* free relatives, they present a nuanced discussion of the relationship between rigidity and identity. They argue for a fundamental shift in the modeling of these concepts, adopting Gupta (1980). The significance of their contribution is in drawing attention to the critical role of the internal head of the relative clause in determining possibilities for reference and in using the notion of sorts and trans-world identity to explain the relation between these possibilities and indeterminacy. Again, I refer the reader to the original article for details. I believe that it should not be difficult to incorporate their insights into a multi-dimensional approach to the meaning of *-ever* free relatives, allowing for maximality in the truth-conditional component and weak indeterminacy in its presuppositional component.

To complete the picture, I propose that *some N or other* differs from *-ever* in having existential quantificational force while sharing the same secondary meaning. Both expressions, because they only require weak indeterminacy, are therefore compatible with episodic statements. Instead, FC *any* shows the sensitivity to modality that it does because of its requirement of strong indeterminacy.

11. FC *any*: Loose Ends

I have accounted for variation along two dimensions, quantification and indeterminacy. As indicated, dividing up the meaning of *-ever* free relatives into a primary quantificational component and a secondary presuppositional component is in line with current thinking on the topic. In the case of FC *any*, however, the present ideas do not mesh with a significant body of work that I do not have space to discuss properly, namely Kratzer and Shimoyama (2002), Chierchia (2006) and Fox (2007), among others. These articles luckily are well known enough that I can assume familiarity with the essentials of the approach they advocate and settle for listing some of their key contributions. Kratzer and Shimoyama, for example, provide a notion of strengthening that reconciles an indefinite FCI over a widened domain with affirmative contexts. Chierchia extends this idea to allow for universal FCI as well as NPI, giving a principled explanation for the fact that many languages have the same lexical item for both while as many do not. He also frames his theory of polarity sensitive items within a framework of recursive pragmatics, as does Fox in his account of FC effects with disjunction. This, then, is an approach with an impressively wide reach.

Compelling as it is, there remain open some crucial questions from the perspective of the issues discussed in this paper, such as differences between definite FCI like *-ever* free relatives and FC *any*, and the distribution of partitive *any*. It is not clear to me, for example, where in Chierchia's system a three-way quantificational distinction could be drawn. And although Chierchia's theory countenances in connection with NPI *any* the possibility that widening is to be interpreted as only a potential for widening, I am not sure this can help with the partitive problem. The approach, in my view, ultimately suffers from an over-reliance on the nominal property which is inherent to the notion of widening. The distributional facts we have looked at call for a more pliable conceptual tool. Fluctuation has this pliability, admitting widening for generic *any*, narrowing for subtriggered *any*, and most crucially, modal manipulation for partitive *any*.

That said, the fluctuation-based approach remains incomplete. It is silent, for example, on the precise character of the secondary meaning, on the relationship between FCI and NPI, on the relationship between FCI and disjunction, and on the historical connection between indefinites and FCI/NPI. In the remaining space I will make some comments on one of these questions, namely the type of multi-dimensional meaning I have ascribed to FC *any*, indicating the direction in which I hope to take this work in the future.^{21 22}

To get started on issues of implementation, let me propose a slightly revised meaning for FC *any*. As shown in (35a), I propose that its truth conditional meaning differs from that of the regular universal in having an extra variable *Z*, of type $\langle\langle s, t \rangle, t \rangle$, that takes scope over the VP meaning. (35b) is as before, except that I have abstracted over the properties *P* and *Q*. The two dimensions of meaning can now be computed compositionally. Let us consider the LF in (36b), with the modal adjoined to TP by QR:²³

²¹ To account for the prevalence of languages in which the same lexical item displays NPI and FCI behavior, perhaps a homogeneity condition uniting not only for all FCI but also FCI and NPI is needed (Jackson 1995, Dayal 1998 and Zepter 2003): $\neg \exists x \exists y [P(y) \ \& \ P(x) \ \& \ x \neq y \ \& \ Q(x) \ \& \ \neg Q(y)]$. This would say, in effect, that statements in which such items occur must have universal import. This may also explain why neutral $\neg \forall$ readings are not available for FC *any* or for *-ever* free relatives. But to have bite, the application of this condition has to be appropriately characterized and modulated.

²² I have also not addressed here the application of this approach to FCI in comparative clauses discussed by Zepter (2003) and in the canasta examples discussed by Menendez-Benito (2005).

²³ Some adjustments will likely be needed to account for generic and episodic cases. For the latter I envisage appealing to a covert modal (\diamond or \square) with an accessibility relation that yields a modal base with only the actual world in it. Alternatively, *Z* may remain free and have its value set by context to the actual world. The generic case will require some thought to ensure proper binding of the world variable inside DP.

(35)a. $\llbracket \text{Any} \rrbracket = \lambda P \lambda Q \lambda Z \forall x [P(w)(x) \rightarrow Z \lambda w' Q(w')(x)]$ *Modal \forall Quantifier*

b. $\lambda P \lambda Q \neg \exists X \forall w' w_a \leq w' \lambda x [P(w')(x) \& Q(w')(x)] = X$ *Fluctuation*

(36)a. Any of these students can / *must win.

b. $[\text{TP} \text{ can/must } [\text{TP} [\text{DP} \text{ any of these students}] [\text{VP} \text{ win}]]]$

c. $[\text{TP}' [\text{DP}_i \text{ any of these students}] [\text{TP}' \text{ can } [\text{TP} t_i [\text{VP} \text{ win}]]]]]$

(37a), the derivation for LF (36b), shows how the primary meaning of *any*, given in (35a) figures in the computation. The main novelty, due to the revision in (35a) is that there remains a variable inside DP even after it combines with VP. This reverses the usual order of composition of a modal with the clause – the TP is the functor and the modal the argument:

(37)a. $\llbracket \text{DP} \rrbracket = \lambda Q \lambda Z \forall x [x \leq_{w-a} \iota y [\text{students}(w_a)(y)] \rightarrow Z \lambda w' Q(w')(x)]$

$\llbracket \text{VP} \rrbracket = \lambda w' \lambda x [\text{win}(w')(x)]$

$\llbracket \text{TP} \rrbracket = \llbracket \text{DP} \rrbracket (\llbracket \text{VP} \rrbracket) =$

$\lambda Z \forall x [x \leq_{w-a} \iota y [\text{students}(w_a)(y)] \rightarrow Z \lambda w' \text{win}(w')(x)]$

$\llbracket \diamond \rrbracket = \lambda p \exists w' w_a \leq w' [p(w')] \text{ or } \llbracket \square \rrbracket = \lambda p \forall w' w_a \leq w' [p(w')]$

$\llbracket \text{TP}' \rrbracket = \llbracket \text{TP} \rrbracket (\llbracket \diamond \rrbracket) / (\llbracket \square \rrbracket) =$

$\forall x [x \leq_{w-a} \iota y [\text{students}(w_a)(y)] \rightarrow \exists w' w_a \leq w' [\text{win}(w')(x)]]$ *for 'can'*

$\forall x [x \leq_{w-a} \iota y [\text{students}(w_a)(y)] \rightarrow \forall w' w_a \leq w' [\text{win}(w')(x)]]$ *for 'must'*

Now let us compute the secondary meaning of *any*, given in (35b), on the same LF:

(37)b. $\llbracket \text{DP} \rrbracket = \lambda Q \neg \exists X \forall w' w_a \leq w' \lambda x [x \leq_{w'} \iota y [\text{students}(w_a)(y)] \& Q(w')(x)] = X$

$\llbracket \text{VP} \rrbracket = \lambda w' \lambda x [\text{win}(w')(x)]$

$\llbracket \text{TP} \rrbracket = \llbracket \text{DP} \rrbracket (\llbracket \text{VP} \rrbracket) =$

$\neg \exists X \forall w' w_a \leq w' \lambda x [x \leq_{w'} \iota y [\text{students}(w_a)(y)] \& \text{win}(w')(x)] = X$

Note that the secondary meaning in (37b) is compatible with the primary meaning for the possibility modal in (37a) but not for the necessity modal. That is, it correctly predicts the grammaticality judgements for the sentences under discussion.

Let us now consider the other LF for the sentence, given in (36c) where *any* c-commands the modal after QR. The problem, as would be obvious, is that the modal is in the wrong place for functional application to take place. Crucially, the secondary meaning (and the way we now have defined the primary meaning) has to be computed without the modal being part of the property Q. So, it seems that the only interpretable

derivation for the sentence is one in which \diamond c-commands \forall . However, given the way the primary meaning of *any* is defined, we derive the interpretation in which \forall ends up having scope over \diamond , in line with conventional wisdom about the scopal properties of FC *any*.^{24 25}

I have demonstrated the contributions of the primary and the secondary meaning components of FC *any*. Let me now briefly try to address the status of the secondary component. We could consider it part of the assertion and simply conjoin the two pieces into the lexical meaning of *any*, along the lines of (38).²⁶ The derivation would proceed as demonstrated in (37a) and (37b):

$$(38) \llbracket \text{Any} \rrbracket = \lambda P \lambda Q \lambda Z \lambda w [\forall x [P(w)(x) \rightarrow Z \lambda w' Q(w')(x)] \& \\ \neg \exists X \forall w' w \leq w' \lambda x [P(w')(x) \& Q(w')(x)] = X]$$

The problem with this move is obvious. The sentence *any of these students must win* will come out contradictory under this implementation but our intuitive judgement is that the sentence is infelicitous, awkward or even ungrammatical: speakers feel the need to change *any of these students* to *all these students*. We also do not get the results we want when we put such sentences in embedded contexts. We do not take (39) to ascribe contradictory thoughts/speech to Mary. The over-riding intuition, again, is one of infelicity or ungrammaticality.²⁷

(39) Mary said/believes that any of these students must win.

It is also not a conversational implicature. The kind of Gricean reasoning that is the hallmark of such implicatures does not seem to be in play. Neither is it possible to cancel the implicature of fluctuation. That leaves us with the last category in the triptych, presupposition.

To establish the presuppositional status of fluctuation is not quite straightforward but I believe (40) provides some evidence for it. On hearing (40) one is likely to accommodate the fact that the speaker does not know exactly who was at the party – making room for fluctuation in the interpretation of the universal:

²⁴ Though different in detail, my proposal here is reminiscent of the analysis in Saeboe (2001), where FCI induces an intensional interpretation.

²⁵ Note that FC *any* can take scope under other quantifiers: *Every student read any books on giraffes he found* (Carlson 1981). This does not seem problematic for the present account which only fixes, in effect, the scope of modals and FC *any*.

²⁶ The accessibility relation in both conjuncts, of course, has to be the same.

²⁷ It is possible that L-analyticity, in the sense of Gajewsky (2002) may be relevant in deriving the effects. Menendez-Benito (2005) uses L-analyticity in her discussion of the proposal in Dayal (1998).

(40) Bill talked to anyone who was at the party.

If so, we would say that infelicity only arises when such accommodation is not possible – as is the case with *any of these students must win*. In those cases, the awkwardness can be remedied by substituting *every N/all the N*. These are the lexical alternatives with which *any* shares, under the present view, a primary quantificational meaning and differs in the secondary condition of fluctuation. One can draw an analogy here with *but* vs. *and* in English which share a primary meaning that requires the conjuncts to be true but part on a secondary meaning which involves contrastiveness of some kind.

Potts (2005) makes a three way distinction between conventional presuppositions, conventional implicatures and at-issue entailments. Drawing on Bach (1999), he homes in on the secondary meaning of *but* roughly as in (40b):

- (40)a. Marv said that Shaq is huge but agile.
b. Being huge generally implies lack of agility.
c. Marv believes that being huge is a good indicator of agility. # He said that Shaq is huge but agile.

The infelicity of the follow-up in (40c) shows that contrastiveness is part of the indirect quotation. It is part of what Marv said, not what the speaker ascribes to Marv's statement. This means that it is not a conventional implicature, which is defined as necessarily speaker-oriented. Instead, following Bach's lead, Potts classifies it as an ancillary at-issue entailment and gives a logic for interpreting such multi-dimensionality.

When we consider the fluctuation requirement of *any*, we see some parallels. The first sentences of (41b) rules out the possibility of any uncertainty on Marv's part, that could help satisfy fluctuation. The follow-up with *any* is infelicitous, *every* would be appropriate. This shows that fluctuation is part of the indirect quotation:

- (41)a. Marv said that he talked to anyone who came up to him.
b. Marv wrote down the names of the people who came up to him. #He said that he talked to anyone who came up to him.

Clearly, more needs to be done to make precise the nature of the secondary meaning of FC *any* but that must remain a promissory note for the present. I hope to have shown, however, that the line of thinking I am pursuing has some initial merit.

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