N-ki-N in Yorùbá and the Semantics of Any

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0. Introduction
The small English word any has been the subject of decades of debate in modern linguistics. This elusive quantifier has been variously dubbed a universal, typically in “free choice” environments like (1) (e.g. Quine 1960, Kroch 1972):

(1) Any shark scares swimmers.

Other scholars have claimed any to be an existential, stemming in part from its alternation with some in “negative polarity item” (NPI) uses like (2) (e.g. Kadmon and Landman 1993; Horn 1997, 2000; Zepter 2003):

(2) My uncle doesn’t eat any (*some) vegetables.

Still others have called any both an existential and a universal, depending on environment (e.g. Ladusaw 1979; Carlson 1980, 1981; Linebarger 1981).

This paper argues for a unified account of any as an existential indefinite. However, I begin by turning to Yorùbá, a Niger-Congo language. Section 1 shows that noun reduplication with ki infixation (N-ki-N) in Yorùbá has the same three interpretations as English any; given this similarity, I argue that a unified account of English any is highly desirable. I argue for the existential account, concentrating on the oft ignored “not just” any (3). These clauses have a particular intonation, with a rise-fall on any and a rise on the sentence-final syllable (Ladd 1980, Shank 2004, Koch 2005). “/” indicates a rise and “/” a fall.

(3) Natalie doesn’t drink (just) /any/ wine from /France.
   (She only likes expensive cabernets.)

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Section 2 contends that the interpretation of “not just” any follows naturally if any is an indefinite. A generic operator GEN binds free choice indefinite any NPs, as in (1). Normally, negation is interpreted in the scope of GEN in NPI any clauses: for example, we can rephrase (2) as “It is generally the case that my uncle doesn’t eat any vegetables.” However, in “not just” any cases (3), negation takes wide scope over GEN. The wide scope reading is forced by the intonation on “not just” any clauses. In particular, the final rise carries an implicature that there is a disputable topic: in (3), this topic is, “What French wine does Natalie drink?” I will show, following Büring (1997) on German, that this implicature is satisfied only when negation takes wide scope over GEN. Section 3 concludes the paper.

1. N-ki-N in Yorùbá

Noun reduplication with kí infixation results in constructions meaning ‘any NP’ or ‘bad NP’ in Yorùbá (Qła 1995, Pulleyblank in press).

(4)  

gm̩  ‘child’
gm̩g  ‘any child / bad child’
ajá ‘dog’
ajákája ‘any dog / bad dog’
gia ‘fish’
giākija ‘any kind of fish / bad fish’

Moreover, the same three interpretations of any are possible in both English and Yorùbá. First, “free choice” N-ki-N is licensed by modality: (5) is ungrammatical without the overt modal lè ‘can’.

(5) ajákája *(lè) bu gmodoje ‘Any dog can bite kids.’
dog.kí.dog *(CAN) take a piece out of young child eat

Interestingly, English any generics do not require an overt modal. The apparent universal force of generic free-choice any statements comes from a covert generic operator GEN (perhaps encoded in the simple present tense used here) which binds existential any in these cases (Kadmon and Landman 1993). Any is a free variable Kamp-Heim indefinite ‘x’ (Heim 1982, Horn 2000 on any). The combination of GEN and x gives us the universal interpretation (i.e. GEN + x = ∀x).

(6) Any river starts as a small stream.
    = GEN x (river(x)) (starts as small stream(x))

In Yorùbá, however, the absence of an overt modal results in either a ‘bad NP’ interpretation, where this is pragmatically (or perhaps lexically) feasible (7b), or

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1 Underlining indicates retraction (quipe = Retracted Tongue Root vowel, ζ = [ʃ]).
2 I do not address the alternate ‘bad NP’ interpretation of N-ki-N constructions in this paper. Not all N-ki-N NPs necessarily receive this interpretation, though it appears to be fairly robust. Absence of the ‘bad NP’ reading could be due to pragmatic problems in a given context, or it may simply be that the lexical entry of some N-ki-N NPs does not include a ‘bad NP’ interpretation.
in ungrammaticality (8b). This follows if there is no covert generic operator in Yorùbá - genericity requires overt modality (see Ajibóyè, this volume, for a similar account). This is shown in (9), where even an unreduplicated bare noun does not get a generic interpretation (9a), without the presence of a modal (9b).

(7) a.  Adé lè ge igbikísé
     Adé CAN do work.kf.work
     ‘Adé can do any type of job.’

     b.  Adé ge igbikísé fún mi
         Adé do work.kf.work for me
         ‘Adé did a bad job for me.’ (≠ ‘any job’)

(8) a.  gjákája lè wè
        fish.kf.fish HTS CAN swim
        ‘Any kind of fish can swim.’

     b.  * gjákája (’”) wè
         fish.kf.fish (HTS) swim
         intended: ‘Any fish swims.’ (c.f. # ‘A/the bad fish swims.’)
         consultant: “This needs a modal like lè to be acceptable.”

(9) a.  gja wè
       fish HTS swim
       ‘A (particular) fish / the fish swims.’

     b.  gja lè wè
         fish HTS CAN swim
         ‘Fish can swim / a fish (generic) can swim.’

The second reading of N-ki-N is as a negative polarity item (NPI). Polarity-sensitive N-ki-N occurs in the scope of negation (10), including superordinate negation (11), or in the scope of other downward-entailing operators like the non-negative adverisative predicate ṫò ‘refuse’ in (12) (e.g. Klima 1964, Ladusaw 1979). This patterns with English, as the (grammatical) translations below show.

(10) ajá kò bu gẹ́ọ̀kóọ́mọ̀ je
dog NEG tear a piece out of child.kf.child eat
     ‘Dogs don’t bite any child (i.e. no child is bitten.’ (≠ ‘bad child’)

1 The high tone syllable (HTS) marks the subject; it occupies the highest tense position (it is present only with modals in a lower position (lè in 8a) or in the absence of modals - 9a). The HTS is realized on the preceding vowel. See Bisang and Sonaiya (1990) for further discussion.
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(11) kò đájú pé enikéni wà níbi
    NEG certain that person.kf.person be in.here
    ‘I am not certain that anyone is here.’

(12) Mo kò láti pújn ajákájá lènu lá
    1SG refuse to lick dog.kf.dog at.mouth lick
    ‘I refused to lick any dog.’

Unlike English NPI any, Yorùbá N-kt-N may be a matrix subject (13). This is accounted for by the high position of negation in Yorùbá, in Tense (Déchaîne 1993, Koch to appear), from where it is able to m-command the subject position (see Progovac 1994 on m-command and polarity items in general). N-kt-N subjects are thus in the scope of negation (Koch to appear), as in (15).

(13) ogbókòme kò wà sì patí (mi)
    child.kf.child NEG come LOC party (me)
    ‘No (bad) child attended (my) party.’
    (c.f. *Any child didn’t attend my party)

(14) M-command
    X m-commands Y if X does not dominate Y and some projection of X dominates Y (Aoun & Sportiche 1983)

(15) Yorùbá Negation in Tense (Déchaîne 1993; contra Bode 2000)

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    TP
     /   \
    /     \ subject
       / m-command \ NÉG
         \       / XP
              \ kò
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In English, in contrast, negation is below TP (Pollock 1989), too low to m-command the subject position (compare the illicit gloss in 13).

The third use of any is “not just” any. In Yorùbá, this occurs in focus constructions with the focus marker ni, where the N-kt-N NP has been fronted.

(16) kíf ge ajákájá ni ó lè bu ogmdé je
    NEG.IMPF do dog.kf.dog FOC 3SG CAN bite young child eat
    ‘It’s not just any dog that is going to bite kids.’ (≠ ‘No dog’)

(17) ejákéja kò ni ó lè fò
    fish.kf.fish NEG FOC 3SG CAN fly
    ‘Not just any kind of fish can fly.’ (≠ ‘No fish’)

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Note that these constructions are ungrammatical if negation does not also appear inside the focus phrase, rather than lower in the clause. This is due to the strict licensing requirement of N-ki-N: it must be inside the syntactic scope of negation, as argued above. Note also the presence of the modal lè ‘can’ in these examples, indicating that “not just” any is a case of negating free-choice any (c.f. Horn 2000, Shank 2004) and that the generic operator GEN is involved (recall the discussion of free-choice N-ki-N above).

Given these similarities between the interpretation of any and N-ki-N, a unified account of English any is highly desirable. It is unlikely that two such unrelated languages would both associate the same word with diverse meanings and functions (FC, NPI and “not just” any) unless these functions were all related.

2. Not Just Any Account Will Do
In this section, I argue that the existential account of any, where free-choice any is a Kamp-Heim indefinite bound by GEN (Kadmon and Landman 1993), gives a natural account of the “not just” any data. I approach the problem by noting that the intonational contour on “not just” any statements in English (3) is also found on clauses with other quantifiers. In (18), there is a rise-fall on All and a rise on the sentence-final syllable. Note that (18) has only one possible logical form, where negation has inverse scope over all (Büring 1997 calls this LF¬∀). If we remove the intonation, the sentence is ambiguous between two possible LFs (19).

(18) All politicians are not corrupt. (LF¬∀, *LF∀¬) (from Büring 1997)

(19) All politicians are not corrupt. (ambiguous: LF¬∀, LF∀¬)

The next section discusses how we can rule out the *LF∀¬ reading in (18).

2.1. Büring (1997) on Intonation and Scope Inversion
Büring (1997) discusses the case of (18) in German, where intonation serves to disambiguate two possible LFs. In the German example, there is a rise on Alle and a fall on negation nicht. Büring calls the fall a focus accent, and the rise a topic accent. Again, negation must take wide scope over the universal at LF.

(20) /[ALLE]r Politiker sind [NICHT]\ korrupt. (LF¬∀, *LF∀¬)
    all politicians are not corrupt

The focus and topic accents are each associated with a set of alternatives (Rooth 1992). Thus, a sentence like (20) leaves us with three semantic objects. First, the ordinary value of (21a) is simply either LF, LF¬∀ or LF∀¬. Second is the focus value of (20). Here, we exchange the focused element nicht with type-identical alternatives (negation and the identity function in this case), which gives us a set of propositions. Finally, we have the topic value of (20), where we exchange topic-marked Alle in the set of focused propositions in (21b) with other
quantifiers; this leaves us with a set of sets of propositions (21c). (Note that we would need to generate focus and topic values for each LF in (21a); I show only LFV below.)

(21) Focus and topic values (adapted from Büring 1997)
   a. Ordinary meaning: [[[[Alle]· Politiker sind [nicht]· korr upt]]]
      = either LFV or LFV

   b. Focus value: [[[[Alle]· Politiker sind [nicht]· korr upt]]]
      = the set of propositions of the form “all politicians are N corrupt,” where N is some type identical alternative to not (presumably not and the identity function)
      = (all politicians are corrupt, all politicians are not corrupt)

   c. Topic value: [[[[Alle]· Politiker sind [nicht]· korr upt]]]
      = the set of Focus values F such that there is an alternative Q to all and F is a set of propositions of the form “Q politicians are N corrupt” where N is an alternative to not (presumably not and the identity function)
      = (all politicians are corrupt, all politicians are not corrupt, most politicians are corrupt, most politicians are not corrupt, some politicians are corrupt, some politicians are not corrupt, one politician is corrupt, one politician is not corrupt, . . . )

   What do we do with these semantic values? Büring assigns an implicature to the intonation in (20), namely that there is a disputable topic in (21c) after uttering (20). If our logical form is LWF, there is nothing disputable. All alternative topic values in (21c) are either excluded because they directly contradict LWF, or they are entailed by it. Thus, LWF is ruled out. On the other hand, relative to LFV, almost all propositions in the topic value are disputable. Are most politicians corrupt? Or are most not corrupt? Or only some? Or one? This is the meaning we want to assign to (20).

   When we look at the English counterpart in (18), there are some important differences. Though the interpretation is the same, the intonation is not. In particular, there is no rise, fall, stress or other intonational focus mark on not. However, note that sentences like (18) are only licitly uttered after a positive counterpart; compare licit (22) to the very odd (23).

(22) A: So Representative Smith stole the money. Politicians are all corrupt!
    B: /All politicians are not corrupt/.  

(23) A: So Representative Smith set up a charity for orphans. Well, politicians are not corrupt after all.
    B: /All politicians are not corrupt/.
    A: Huh?
Thus, when we consider the discourse context, (18) is focused as far as negation is concerned. The quantifier *all* is clearly also focused ("topic" marked for Büring), carrying a rise-fall contour. In the English case, the implicature that there is a disputable topic after uttering (18) can be assigned to the sentence-final rise.

2.2. Rise-Fall-Rise Intonation on “Not Just” *Any*

Let’s see how Büring’s analysis extends to “not just” *any*, which carries the same rise-fall-rise intonation as discussed in section 2.1. Recall that this is a case of negated free choice *any*, so there is a generic operator involved (where GEN + x = \(\forall x\)). The interpretation of these clauses is such that negation has widest scope. Let’s call this LF-GENx.

(24) Natalie [doesn’t] drink (just) [/any], wine from /France.
    \[ \text{GEN } x \text{ (French wine}(x)) \text{ (drink}(n, x)) \]
    “It’s not the case that Natalie drinks all wine from France.”

In NPI clauses, on the other hand, negation is interpreted in the scope of GEN. In this case, indefinite *any x* is existentially closed by \(\exists\). Let’s call this LFGEN=\(\exists\). Assuming GEN is in IP (perhaps part of the simple present tense) and that English negation is below IP (Pollock 1989), then this LF matches overt syntactic scope.

(25) Natalie doesn’t drink any wine from France.
    GEN-\(\exists x\) (French wine(x)) (drink(n, x))
    “In general, it’s not the case that Natalie drinks some wine from France.”

On the other hand, in “not just” *any* clauses (24), negation scopes outside of GEN at LF, but not in the syntax. We have then, a case of scope inversion (May 1977, Giannakidou 1998 on inverse scope NPIs in Greek). In English, this is accomplished via the use of intonation and/or *just*; Yorùbá (a tone language) does not have this option. Instead, the “not just” N-kf-N interpretation is generated syntactically via overt fronting of the N-kf-N and negation before the focus marker *ni* (see examples 16-17).

While the sentence *meaning* for “not just” *any* is given in the paraphrase in (24), recall that the intonation also carries an implicature, namely that there is a disputable topic after uttering (24). This disputable topic is: “What French wines will Natalie drink? Pinots noirs? Chardonnays? Cabernets? etc.,” which is of course exactly what we are left wondering after hearing (24).

2.3. Forcing Scope Inversion: Focus and Topic Marking

We can go further than just stipulating that the intonation associated with “not just” *any* clauses generates an inverse scope reading. In this section, I apply Büring’s (1997) analysis of scope inversion in German to “not just” *any*, arguing that inverse scope is the only reading possible, even if we admit the NPI GEN=\(\exists\)
logical form as a possible candidate. The scope interpretation can be calculated based on the implicature resulting from topic and focus marking.

The first step is to show that “not just” any clauses are both topic- and focus-marked. First, note that these clauses too are licit only in contrast to a positive counterpart (26), sounding distinctly odd when uttered after a negated any clause (27). Negation in “not just” any clauses is thus focus-marked (indicated by subscript “F” in (24) and (26B) with respect to a positive alternative.

B: She [doesn’t]t_drink [/any]t_wine from /France. Only cabernet.

(27)  A: Natalie doesn’t drink any wine from France.
B: #She [doesn’t]t_drink [/any]t_wine from /France. Only cabernet.

Now for the topic marking. Recall that any in these clauses carries a rise-fall contour, and is usually stressed (Koch 2005). Let us then give any a topic mark (indicated by subscript “T” in 26B).

Following Büring (1997), we are now left with three semantic objects. First is the ordinary meaning of (24); this could be either the LF where GEN has wide scope (LFGEN→x), or the logical form where negation has wide scope (LF→GEN x) (28a). Second is the focus value of (24), where we exchange the focused element (negation) with type-identical alternatives (the identity function – 28b). This gives us a set of propositions. Finally, for the topic value of (24), we exchange topic-marked any in the set of focused propositions in (28b) with other quantifiers; this leaves us with a set of sets of propositions (28c).

(28)  Focus and topic values (adapted from Büring 1997)
  a. Ordinary meaning: [[Natalie [doesn’t]t_drink [/any]t_wine from /France.]]
      = either LFGEN→x or LF→GEN x

  b. Focus value: [[Natalie [doesn’t]t_drink [/any]t_wine from /France.]]'
      = the set of propositions of the form “Natalie does N drink any wine from France,” where N is some type identical alternative to not (presumably not and the identity function)

  c. Topic value: [[Natalie [doesn’t]t_drink [/any]t_wine from /France.]]''
      = the set of Focus values F such that there is an alternative Q to any and F is a set of propositions of the form “Natalie does N drink Q wine from France,” where N is an alternative to not (presumably not and the identity function).

We can now use these semantic objects to rule out the LFGEN→x for “not just” any sentences, and rule in LF→GEN x. Recall, following Büring (1997) on German, that the final intonational rise generates an implicature that there is a
disputable topic after uttering (24). I will show that only LF$\sim$GENx generates a topic value containing disputable propositions.

2.4. Ruling Out the LFGEN$\sim$x Reading

Let’s generate our semantic values for LFGEN$\sim$x. This reading is not available for “not just” any clauses, and we can eliminate it here. First is the ordinary meaning of (24), in this case with LFGEN$\sim$x (29a). Focus and topic values for this LF are shown in (29b) and (29c), respectively. [[S]] stands for the sentence under examination.

\[(29)\quad\text{Semantic values of “Natalie [won’t]_{r} drink [/any]_{r} wine from /France”}\
\[\quad\text{a.} \quad [[S]]^{0} = \text{[GEN [not [∃x ((French wine(x)) (drink(n,x)))]+]}}\]
\[\quad\text{b.} \quad [[S]]^{1} = \text{GENx (Fr. wine(x)) (drink(n,x)), GEN¬∃x (Fr. wine(x)) (drink(n,x))}\]
\[\quad\text{c.} \quad [[S]]^{2} = \text{GEN∀x (Fr. wine(x)) (drink(n,x)), GEN¬∀x (Fr. wine(x)) (drink(n,x))},\]
\[\quad\text{GENmostx(Fr. wine(x)),GEN¬mostx(Fr. wine(x))(drink(n,x))},\]
\[\quad\text{GEN∃x (Fr. wine(x)) (drink(n,x)), GEN¬∃x (Fr. wine(x)) (drink(n,x))},\]
\[\quad\text{GENnonex(Fr. wine(x)) (drink(n,x)), GEN¬nonex(Fr. wine(x)) (drink(n,x))}...\]

Now, given the topic value in (29c), are there any disputable propositions left relative to LFGEN$\sim$x? There are not. The propositions in (29c) are either directly contradictory to LFGEN$\sim$x and hence excluded, or they are entailed by LFGEN$\sim$x. If, in general, it is not the case that Natalie will drink some wine from France, then it is not possible that she drinks all, most, some, or even one wine from France; this logic excludes the left-hand column of propositions in (29c). On the other hand, LFGEN$\sim$x entails that Natalie also will not drink all, most, some or one French wine – this entails all propositions on the right side of (29c).

No propositions in (29c) are disputable. The implicature is left unsatisfied, and LFGEN$\sim$x is rejected.

2.5. Ruling In the LF$\sim$GENx Reading

Next, let’s generate the semantic values for the LF$\sim$GENx interpretation. This is the interpretation we want for “not just” any statements.

\[(30)\quad\text{Semantic values of “Natalie [won’t]_{r} drink [/any]_{r} wine from /France”}\
\[\quad\text{a.} \quad [[S]]^{0} = [¬ [GENx ((French wine(x)) (drink(n,x)))]+]\]
\[\quad\text{b.} \quad [[S]]^{1} = \text{GENx (Fr. wine(x)) (drink(n,x)), ¬GENx (Fr. wine(x)) (drink(n,x))}\]
Are there any disputable topics left in (30c)? The first proposition is excluded, since for LF=GENx, if it is not the case that Natalie drinks all wine from France (recall GENx=∀), then it is not possible that she generally drinks all French wines. The remaining propositions are disputable, however. Does Natalie drink most French wines, or not? Does she drink some? Or only one? This is precisely the meaning we wish to generate out of a clause like (24). The implication generated by the intonation is satisfied, and LF=GENx is ruled in.

2.6. “Not Just” Any in Yorùbá

The semantic approach outlined above works exactly the same in Yorùbá. “Not just” any sentences are uttered with respect to a positive counterpart, giving us focus marking on negation; (31) is illicit without the focus negation marker kọ.

(31)   ẹjájá  *(kọ) ní, ọ jọ́rọ̀ ní ọjá
       [dog,kf,dog NEG FOC] HTS eat.mango at market
       ‘It was not just any dog that ate mango at the market.’

Secondly, the entire any NP is fronted inside the focus phrase indicated by ni, giving us secondary focus marking (‘topic’ marking for Büring) on the any NP. The clause is not licit without the focus marker (32).

(32)   ẹlẹkẹlẹ  kọ  *(ni) ọ jọ́ná ní kalifónià
       [house,kf,house NEG *FOC] 3SG burn at California
       ‘It's not (just) any house that got burnt in California.’

Given these two focused elements in the Yorùbá cases, the correct LF for “not just” N-kf-N can be calculated as in sections 2.4 and 2.5 for English. For Yorùbá, we have to assume, following Büring (1997) for German, that it is the combination of topic and focus marking which generates an implication that there is a disputable topic after uttering sentences like (31) and (32).

3. Conclusion

I have looked at two aspects of any in this paper. First, I showed that the same three readings of any are possible in both English and Yorùbá. Secondly, I focused on “not just” any to argue that its interpretation follows if any is an existential indefinite. Topic and focus marking, along with an implication that there is a disputable topic after uttering a “not just” any statement, conspire to permit only one LF interpretation, where negation takes inverse scope over GEN.
An important point to note here is that the semantic mechanism which generates the correct LF∼GENx for "not just" any clauses is independent of the language-particular syntax of "not just" any (Rullmann p.c.), so long as these clauses are focused as far as negation and the any quantifier are concerned.

In fact, the particular analysis of free-choice any is not crucial here. Though I have taken the approach where free-choice any is a Heimian indefinite bound by the generic operator (following Kadmon and Landman 1993), an analysis where free choice any is a universal quantifier will work just as well. This is because, truth conditionally, GENx = ∀x. Thus, LF∼GENx and LF∼∀ both leave disputable topics, whereas neither LFGEN∼x and LFM∼ leave anything disputable. However, given the parallels between any and N-ki-N, the unified analysis of any as an indefinite existential strikes me as more elegant.

References


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