Examining domain widening and NPI *any*[1]
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1.   Introduction

This squib examines *domain widening* (DW) as used in the analysis of NPI *any*. Since Kadmon and Landman's (1993) influential proposal (K&L), DW has played an important role in numerous accounts of the interpretation of *any*. In a DW-analysis, NPI *any* is claimed to lift restrictions on domains of quantification operative in the conversational context, resulting in stronger assertions.[2] The difference with regular indefinites is that they (may) have contextually restricted interpretations, which in the scope of negation lead to weaker statements. This squib shows that regular indefinites in the scope of negation can actually be very resistant to contextually restricted domains of quantification. It is then difficult to distinguish them from NPI *any* in terms of DW. Given the evidence presented here, further elaboration of the mechanisms of domain widening/restriction would be needed to support a DW-analysis of NPI *any*.

One of K&L's famous examples in favor of DW involves potatoes. In a conversation in which we are interested in making fried potatoes, somebody asks *do you have potatoes*? In this context we are interested in *cooking* potatoes. An answer with a regular indefinite appears to leave the interpretation of the indefinite within the contextually restricted domain (*Oh, I don't have potatoes*! = I don't have cooking potatoes). However, an answer with an *any* indefinite indicates that we don't have potatoes of any kind (*Oh, I don't have any potatoes! =* I don't have cooking potatoes, rotten potatoes, potted potatoes, etc.). *Any* is thus claimed to lift the domain restrictions that had been operative in the context of a conversation about making fried potatoes.[3] However, while the intuitions in K&L's potato example seem to support a DW-view of

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[2] DW has also been invoked in the analysis of FC items without appealing to strengthening (e.g. Kratzer and Shimoyama (2002), Alonso-Ovalle and Menendez-Benito (2008)). Such uses of DW lie outside the scope of my discussion.
[3] *Any* has been claimed to have a 'not even one' interpretation, which can be characterized in a DW-analysis as the lifting of restrictions with respect to minimal amounts in the domain of quantification. However, such readings can also be accounted in terms of alternatives which do not appeal to DW (Fauconnier 1975, Heim 1984, Krifka 1995, a.o.), so they cannot be the backbone of a DW proposal. We will discuss DW focusing on examples that do not have to do with 'amounts'.

NPI *any*, we will show that the pattern does not fully generalize. The kinds of domain restrictions that have been claimed to affect the interpretations of ordinary quantifiers like *every*, *no*, etc. in non-negative sentences are resisted by regular indefinites in the scope of negation. If that is the case, some clarification is needed to support the characterization of NPI *any* as a *domain widener*.[4]

The squib is organized as follows. In §2 we will examine examples in which context appears to make salient domain restrictions and yet regular indefinites in the scope of negation refuse to operate within the contextually established limits.[5] In §3 we will (briefly) examine DW from the perspective of a situation-based approach to domain restrictions. Situations provide some of the most successful examples of domain restrictions, but, as we will see, *any* does not lift situational-restrictions (NPI *any* does not itself shift the 'topic situation'). In §4 we will examine a proposal that *any* can result in DW along a modal (epistemic) dimension (Chierchia 2006). As we will see, such an account makes predictions that are too strong.

2.   Lifting contextual restrictions on domains of quantification

According to K&L, conversational contexts set up domains of quantification from which all sorts of things are excluded. The idea that context makes available such restricted domains is part of the DW explanation. Indeed, as Chierchia (2006: 555) notes in presenting DW: *The only way to measure domain size is by comparison; this entails that the meaning of 'any' must be inherently relational. It must involve comparison among D(omain)-alternatives*. The contrast between *any* and regular indefinites can be explained in terms of DW if the regular indefinites associate with the more restricted domains of quantification made salient by context. In this section we will present examples that show that regular indefinites in the scope of negation can actually resist associating with restricted domains. Let us begin with the example in (1):

(1)   A friend comes in from the rain, soaked, and asks:
       a. Can you lend me socks?/ (or even: Can you lend me dry socks?)
       You have just put every sock you own into the washing machine, and answer:
       b. Sorry, I don't have socks. (Your friend looks at you strangely.)

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[4]   The examples in the squib will follow the K&L schema in making use of bare plurals under negation. However, the observations can be reproduced with *'a N'* indefinites in those contexts in which they may actually be used.
[5]   It has been observed in the literature that the DW-analysis does not make DW obligatory, but merely possible (Chierchia 2006, a.o.). Finding domain-specific counterexamples to DW is not in itself an issue. The point to be made, however, is that regular indefinites can systematically fail to associate with contextually restricted domains. This is more relevant.

In the exchange above, your friend will find your answer odd. It is clear that she is interested in dry socks (she would not have appreciated a 'yes' answer followed by wet socks). It is also clear that the answer 'Sorry, I don't have dry socks' would have been perfectly fine. So, to simply say 'I don't have socks' in a context in which it is clear to everyone that the only relevant socks are dry socks does not count as saying 'I don't have dry socks'. The regular indefinite in the scope of negation does not access a contextually restricted domain. Here is another example, making the same point:

(2)   A friend approaches you at a barbecue with a plate of veggie burgers he has recently finished cooking. They are burnt.
        Your friend: Do you want veggie burgers?
        You: No thanks, I don't want veggie burgers.

If you answered in this way, it would be odd to wait until your friend had gone away, and then turn to someone next to you and say, pointing to a plate of nicely done veggie burgers: *I want veggie burgers*. They would accuse you of lying. You could defend yourself with: *I said that because I didn't want those veggie burgers* (this is the reason you lied). But not with: *I said that I didn't want those veggie burgers* (this is not what you said). Here is a final example:

(3)   You and your TV producer boss are looking for children for a commercial. They must be blond, between the ages of 3 and 5.
        Your boss (frustrated): I don't know what to do! I must find children!
        You: Don't look at me! I don't have children. (#Only an 8-year old).

We see in (3) that the regular indefinite is understood as restricted in the (non-negative) remark made by the boss. But when the indefinite is in the scope of negation, we understand it without restriction (and so your continuation is odd).

In the context of this discussion, it is interesting to see that even if we increase the pragmatic pressure for reduced domains, regular indefinites still resist. Consider the example in (4), which carries the presupposition trigger *either*:

(4)   a.You: I don't have front-row tickets.
        b.Me: i. #I don't have tickets either.
               ii. I don't have front-row tickets either.

In order for the presuppositions of *either* to be satisfied, my reply has to be about front-row tickets. Yet, as we see in (4b.i) the presuppositions of *either* do not facilitate a restricted domain for the regular indefinite. And yet, if it was possible for the regular indefinite to access a reduced domain, we might expect it to happen here, since that would lead to a felicitous interpretation for *either*.

We may worry that there could be a confound in the examples above, which I will describe informally. Consider (1), for instance. Maybe what happens in (1) is that when you reply *No, I don't have socks* that answer is compared to another answer that you could have given *No, I don't*.[6] This other answer is, in a sense, 'more anaphoric' than the previous one (making greater use of ellipsis). If there are constraints that favor anaphora and disfavor repetition, it may be that when faced with the answer *No, I don't have socks* we are simply not willing to interpret it in a way that would make it equivalent to *No, I don't*. After all, if <u>that</u> was what was meant, the more anaphoric version would have been used. To control for this possibility, I have constructed more complex examples in which there isn't a more elliptical answer equivalent to the answer that could be obtained with a regular indefinite with a restricted domain. Interestingly, in the more complex cases we do see domain restrictions at work in a manner that fits the expectations K&L have raised regarding regular indefinites:

(5)   <u>You</u>: Do you know French writers or singers?
         <u>Me</u>: I don't know writers, but I know singers.

In this example, my ignorance of writers can be understood as restricted to French writers. In (5), the information in the answer could not be provided by a more elliptical form (*No, I don't /Yes, I do*), and this may help in recovering the restriction. Another example following this pattern is provided in (6):

(6)   <u>You</u>: Do you have older brothers or sisters?
         <u>Me</u>: I don't have brothers, but I have sisters. (= *I don't have older brothers*)

In these examples it seems easy for the regular indefinite in the scope of negation to associate with a restricted domain. However, in examples like these it is also natural for the *any* indefinite to associate with a restricted domain:

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[6] I won't speculate on what the ellipsis site looks like.

(7)   <u>You</u>: Do you know French writers or singers?

        <u>Me</u>: I don't know any writers, but I know singers.

        (= *I don't know any French writers*)

(8)   <u>You</u>: Do you have older brothers or sisters?

        <u>Me</u>: I don't have any brothers, but I have sisters.

        (= *I don't have any older brothers)*

The examples in this section show that regular indefinites in the scope of negation can resist associating with restricted domains. The cases in which they do access restricted domains are cases in which *any* indefinites naturally do so too. It is not trivial to maintain that the difference between *any* indefinites and regular indefinites is that the former are specialized for wide(r) domain of quantification and the latter access domains of quantification restricted by context.

3.   Domain widening via topic situations

Some of the clearest examples of domain restriction discussed in the literature are 'situational' restrictions (restrictions regarding *where* things are). Lewis (1986: 136-137) gives a famous example: *when I look in my fridge and say there is no beer. I do not say that there is no beer outside the fridge, but I ignore it in my speech*. In frameworks working explicitly with situations, restrictions have been encoded by means of (free) situation variables associated with quantificational elements (a.o. Barwise and Perry 1983, Recanati 1996, 2004, Kratzer 1989, 2007/8). The quantificational claim is thereby restricted to the individuals in the situation under consideration (the 'topic' situation, see Kratzer (2007/8)). Here are some examples:

(9)   a.   No one is asleep. (Barwise and Perry 1983)
        b.   Every tree was laden with wonderful fruit. (Kratzer 1989)

In (9a) the claim made by *no one* is restricted to the individuals in the relevant situation (e.g. no one <u>in our house</u> is asleep). In (9b) the claim made by *every* is restricted to the individuals in the relevant situation (e.g. every tree <u>in my garden</u> was laden with wonderful fruit).

If domain restriction is characterized in terms of a topic situation associated with an (existential) indefinite, a DW analysis of NPI *any* would require that *any* shift the

topic situation, presumably to a more inclusive situation. However, it seems clear that the effects brought about by *any* cannot systematically be characterized as the shifting of topic situations. To see this, consider the example in (10):

(10)   Me: In his French class, John was horrible to the male students.
        You: Yes, he was particularly horrible to the male students. But he actually didn't give any students their grade.

In the exchange in (10) we see an effect brought about by *any*, but there is no shift in the topic situation: we are still talking about the students in John's French class. We couldn't make sense of (10) in terms of DW if we consider domain restriction to take place via topic situations.

    Another argument against the idea that *any*-effects can be explained as a shift in the topic situation can be given with a version of von Fintel (1994)'s examples showing that domain variables can be bound. As (11) illustrates, it is possible to find both regular and *any*-indefinites associated with a bound domain variable (here, a situation variable):

(11)   a.   In five of John's classes, he didn't tell (any) students that they were
                hopeless.
        b.   In five s: s is a class, John didn't tell (any) student in s that they were
                hopeless.

Given the bound nature of the situation variable restricting the indefinite, it is not possible to explain the *any*-effect in (11) in terms of 'widening' of the topic situation (the variable does not refer).

4.   Epistemic domain widening

Chierchia (2006) proposes a DW account of *any* that allows for 'epistemic widening': DW takes place both along a *quantitative* dimension (we pick the largest domain in the context) and a *qualitative* dimension. Chierchia illustrates the qualitative dimension with an example: *We are sure that John exists, but we may be uncertain whether he is a man or still a boy. This means that in some worlds compatible with what we know, he is a boy; and in others, he isn't. Using "any boy", we might signal that our claim extends to him.* (Chierchia 2006: 555). The qualitative dimension of DW, associated with epistemic uncertainty (Chierchia 2006: 556, footnote 22), is encoded in the denotation of existential

any with an existential quantifier over worlds restricted to epistemically accessible worlds:[7]

(12) $\llbracket \mathbf{any_D} \rrbracket = \lambda P \lambda Q \lambda w [\exists w' \exists x \in D_{w'} [P_{w'}(x) \, \& \, Q_w(x)]]$ (where D is a contextually

salient domain of quantification and D_w is the set of members of D that live in w)

The object quantified over by *any* satisfies the restrictor predicate in an epistemically accessible world. *Any* thus widens the domain qualitatively, by allowing quantification over individuals that satisfy the restriction in the actual world or in some other epistemically accessible world.

There are examples that indicate that epistemic DW is too strong. Let's follow up on the case above. Given the existential quantifier in (12) (restricted to epistemically accessible worlds), if we don't know whether somebody (Juan) is a boy, claims with *any boy* will extend to him. So, for example, if Sara didn't see Juan, and did not see any other boys (or individuals about whom we have doubts), the sentence in (13) is predicted to be true:

(13)   Sara didn't see any boys.

This is a good thing. But given (12), (13) actually claims that Sara didn't see any entity that (as far as our epistemic state is concerned) could be a boy. Imagine now that Sara did see Juan who, as far as we know, might be a boy (i.e. there is an epistemically accessible world in which he is a boy). Suppose furthermore that he isn't actually a boy, he is an old man. We would probably not be willing to utter (13) in these circumstances. However, the sentence would still be true: if Juan is not a boy, then the fact that Sara saw him will not count as a counterexample to the claim in (13). Allowing DW along an epistemic dimension makes wrong predictions for *any*.

5.   Conclusion
In examining the DW-analysis of the contrast between NPI *any* and regular indefinites, we have worried about the expectation that regular indefinites in the scope of negation associate with contextually restricted domains of quantification. We have observed that regular indefinites in the scope of negation can resist contextual domain restrictions rather systematically. The cases in which they access restricted domains are cases in

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[7] Chierchia (2006) points to the relation with the modal proposal for *any* in Dayal (1998).

which NPI *any* naturally does so too. We have also observed that the predictive power of the DW-analysis does not actually improve if we conceptualize DW in terms of the lifting of situational restrictions or in terms of widening along a modal (epistemic) dimension. Further elaboration of the DW-hypothesis would be needed to explain the examples presented here and show that restricted domains of quantification are indeed available in the contexts in which we find NPI *any*.

This discussion leads us back to K&L's original potato example, where the intuitions seemed to be the right ones for a DW analysis. I am not able to say anything conclusive here. It may indeed be that in a context in which we want to cook potatoes, I can say *I don't have potatoes* to mean *I don't have cooking potatoes* (more systematic data would be useful!). But consider now the following case: imagine that you tell me you want to make an amusing potato tortilla, and ask me if I have blue potatoes. We open the fridge and find a whole bag of regular white potatoes. I could not simply say: *Oh…, I don't have potatoes*. In turn, this makes it difficult to argue that if my fridge had been empty and I had said *Oh…, I don't have any potatoes*, I would have chosen *any* to indicate that it wasn't only blue potatoes that I lacked (i.e. we cannot claim that *any* would have lifted the color restriction otherwise operative in the context). This suggests that it is not correct to look at K&L's example and say (simply) that *any* lifts contextual restrictions that would affect the interpretation of other indefinites.

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